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ABSTRACT

This report summarized methodology employed to disseminate social science knowledge for use in manpower agencies in a manner designed to increase the probability of correct application of the knowledge in the task performances of manpower workers. The report covers methods of retrieving and synthesizing relevant research, organizing the knowledge into diffusable sets of materials, media use, teaching/learning strategies, and methods of dissemination through the manpower system. Methods employed in the development of a manual on role modeling and role playing, a set of audiotapes plus workbooks on simulation and imitation, and a multi-media package of Group Leadership Techniques Workshop materials are applied to the development of diffusable materials whose objective is to increase the capacity of local manpower agencies to adopt new methods. Thus a total model for development work comprising retrieval, media and methods of communication, diffusion, and adoption is generated. (Author)

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Retrieval, Organization and Dissemination of Social Science Knowledge

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PUTTING SOCIAL SCIENCE KNOWLEDGE TO USE IN THE MANPOWER SYSTEM: AN OVERVIEW REPORT

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PREFACE

This report summarizes an integrated series of research and development projects undertaken by Manpower Science Services, Inc., under contracts and grants from the U.S. Department of Labor.

Manpower Science Services, Inc. is a non-profit corporation established in 1968. It is concerned with research and development in the social sciences, applying social science knowledge to the ways in which manpower agencies give service to their clients, and studying ways of getting innovations in service delivery used by staffs of manpower agencies.

These interests are pursued by: 1) Developing training packages to instruct staff in the use of new approaches; 2) Encouraging staff to use the training materials; 3) Tracking on the results of having staff use the materials; and 4) Collecting data on the factors that influence use of new technology by manpower agencies.

MSS' work is based on the following principles:

1. All materials are founded on careful reviews of relevant social science research.
2. MSS works closely with on-line practitioners in local manpower agencies in adapting social science knowledge to practical needs and conditions.
3. Materials are directed to on-line practitioners in professional, administrative, and paraprofessional occupations.
4. Materials are designed to be useful in local manpower agencies, without requiring expertise outside that available in the using agencies.
5. All materials are tested by line and managerial staff in the field and modified on the basis of feedback from staff.

The content of this summary is a product of many people's work, so intricately enmeshed that it would be impossible to single out specific authorship for this or that idea. It is therefore most appropriate to list all MSS staff who have participated in these projects, as the authors of this report. In order of seniority with the organization, the authors are:

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INTRODUCTION

A major problem facing the manpower system is that of keeping its components up to date in the use of modern techniques of service to the unemployed, underemployed and employer. There is an increasingly rapid flow of new knowledge from the social sciences which is potentially capable of increasing the effectiveness of services, and/or their efficiency. Some of this knowledge production is sponsored by the Manpower Administration through its Office of Research and Development. Yet a major issue to be resolved is the development of some systematic and efficient way of getting ORD products to potential users in the far-flung manpower system, with its unique federal-state division of authority and responsibility.

Much of the new knowledge being produced is relevant to the use of techniques by manpower workers who interact directly with the public (applicants, employers, related service agencies); their use of techniques generally falls within the range of discretion of the individual workers, and cannot be effectively prescribed. Thus a major aspect of the problem has to do with communicating new social science knowledge in such a way that these workers will use the knowledge and thereby adopt methods which will improve their effectiveness. Unlike practitioners in many other occupations (for example, physicians, lawyers, engineers, farmers), manpower workers have no network of agents such as extension service agents or drug manufacturers' representatives, and no common communication media such as technical journals and membership in professional associations which could serve as channels for keeping them in touch with new knowledge and techniques. Thus the problem cited above comes down to a need for methods of retrieving relevant and useful empirically tested knowledge, organizing that knowledge, and communicating it to manpower workers in a form which maximizes the probability that they will use that knowledge correctly and efficiently.

Since 1968, Manpower Science Services has been engaged in extensive research and development in an effort to meet this need. It has done this through step-by-step development and try-out of the components of a model for the diffusion and utilization of social science knowledge specifically for the manpower system. The purpose of this report is to describe that model, and to summarize the knowledge acquired thus far about its components. A secondary purpose is to illustrate the ways in which these components are combined in MSS' current project, in which each component of the total model is being implemented.

A. A Knowledge Diffusion-Utilization Model for the Manpower System

The major phases of a complete knowledge diffusion and utilization cycle may be described as follows:

1. Retrieval and Organization

The first major task is that of locating, screening, and identifying relevant and useful knowledge. This task includes that of developing conceptual schemes for organizing and relating the knowledge to be retrieved in a manner consistent with utilization objectives.

2. Communication Media

Given some body of potentially useful knowledge, there is a need for "packaging" it in such a way that it can be communicated inexpensively and efficiently to potential users, in a manner which will lead to adoption and use of the knowledge by those with discretionary control over its application. A corollary of this phase is a design of the package in a way that will result in the correct use of the knowledge (i.e., in a manner consistent with the evidence for effectiveness).

3. Dissemination Strategies

Once a package has been developed, it must reach its intended audience. Given the competing demands on the time, interest, and attention of the many people throughout the manpower system, questions of priority arise. There is thus a need for designing and implementing strategies which will enable potential users in the manpower system to become aware of useful knowledge packages, and to follow up on such awareness by direct exposure to the knowledge they contain.

4. Increasing the Adoption Capacity of Manpower Agencies

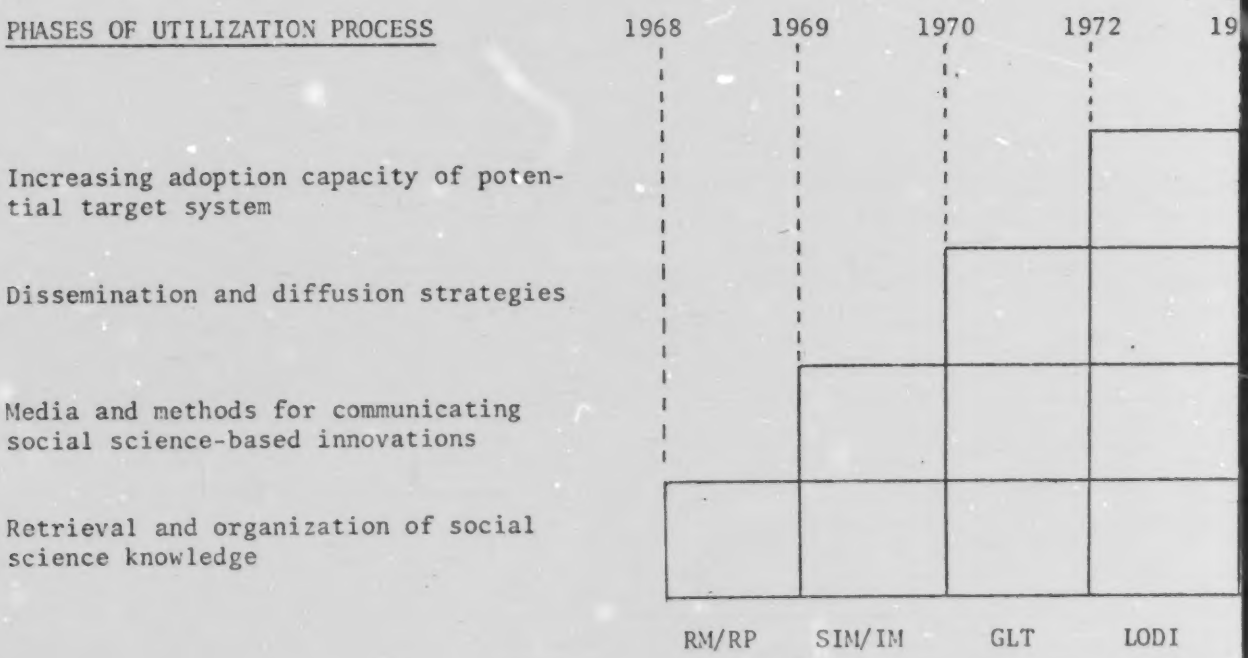
The final phase of our model-building focuses attention on structural and operational adjustments, compatible with the mission and organization of manpower services, which will increase the ability of units within the system to adopt innovations in their methods of practice. The distribution of scientific knowledge has little point if it does not result in use - that is, in some change in the way in which manpower workers carry out their functions. Yet change in any organization is problematic and can be disruptive. Thus this last phase is concerned with methods through which manpower agencies can adapt themselves to new methods and techniques of service, so that new knowledge which could increase effectiveness and efficiency may be put into use without undue delay or disruption.

Although it is possible to describe these four phases of a knowledge-utilization sequence as if they were distinct stages, it is clear from MSS' work that they form an integrated system in which no one component can be designed or implemented without consideration of its articulation with the others. Indeed, each phase or component is shaped by the characteristics and plans associated with those components which occurred prior to it in time. The body of this report will describe the character of some of these interrelationships.

MSS has engaged in four substantive projects since 1968, under Manpower Administration auspices. Each project has had as its "center" the exploration of one of the components described above. From its first project, which emphasized retrieval and organization of knowledge, MSS has proceeded through subsequent phases to the present project on the last component, increasing adoption capacity of manpower agencies. In each subsequent project, the functions explored in prior ones were continued and further elaborated, while the new component on which that project was centered was added for special study. Thus the current project includes all the components studied and developed previously, and serves as a total implementation of all the components.

In each of these projects, the components of the model were developed through application to a particular example of knowledge retrieval-diffusion-utilization (R-D-U). The first project (RM/RP) concerned the retrieval of social science knowledge relevant to Role Modeling and Role Playing as techniques of great potential usefulness in the manpower system; the second project was concerned with the communication of these techniques (with names changed to Simulation and Imitation) through audiotaped and printed self-instructional materials (Sim/Im); the third used group work and Group Leadership Techniques in manpower agencies as the substantive topic (GLT), and the current project includes aspects of the contents of the earlier ones, organized around topics appropriate to Local Office Decision-making and Implementation (LODI). Thus, each project has had two faces: on one side, knowledge of R-D-U process is the product of the project, while on the other, a product of social science knowledge which is of direct utility to the manpower system is generated.

The following figure summarizes the relationships among these projects and the components of the knowledge utilization model:



CONCEPTUAL MODEL FOR THE EVOLUTION OF A
SOCIAL SCIENCE KNOWLEDGE UTILIZATION STRATEGY

The remainder of this report will summarize the main features of each of the components of the model, as we have come to know them through our work on the four projects identified above. This recounting of the main features of our work is not by itself sufficient to provide guidance for an organization which tries to adopt the model; essential operational information regarding what is to be done, how, and when, in order to implement the model, cannot be covered adequately in a brief overview. Such matters are addressed in more detail in a series of monographs being prepared by MSS.*

For each component of the model, this report will summarize the major conclusions, and then describe the ways in which those conclusions are represented in the final project now under way.

The last section of this report will discuss characteristics of the kind of organizational structure suited for the implementation of this model of knowledge utilization.

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* The first three of this series (1. Choosing Topics; 2. Basic Strategy Decisions; 3. Retrieving and Conceptualizing Knowledge) are almost completed and available for distribution. Subsequent monographs on such matters as packaging knowledge, relations with potential users, field testing, dissemination, follow-up and utilization feedback, will be issued from time to time.

I. RETRIEVAL AND ORGANIZATION OF SOCIAL SCIENCE KNOWLEDGE

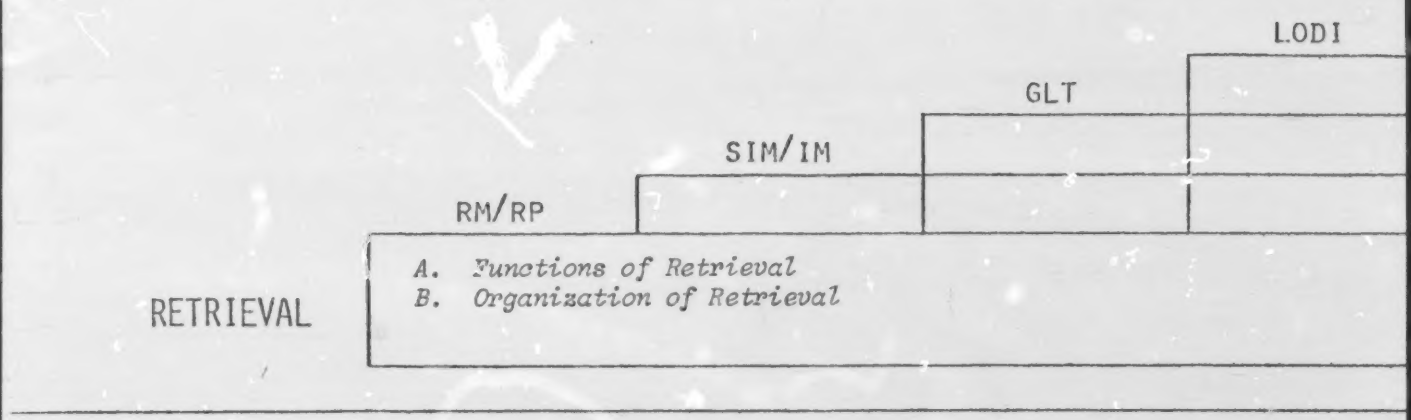
Knowledge retrieval is directed at what is already known scientifically about the topic or technique to be disseminated and used in the manpower system, and at characteristics of the manpower system which might affect the use that can be made of the social science knowledge. Both kinds of retrieval activities may be done primarily through reviews of the research literature, except that there is less already written about the manpower system than is needed. Accordingly, some portion of retrieval of knowledge is carried out through the collection of new data in the manpower system. This data collection ranges from the informal to the formal, from participant observation through the use of informants from the field to more structured interview and survey studies.

A. Functions of Retrieval

There are four major functions of the retrieval component:

1. Initial assessment of the state of social science knowledge regarding a particular topic or need of the field. The major question here is whether there has been sufficient research to support the development of a scientifically-based technology relevant to the topic. Thus one function of a first "pass" at the research literature in RM/RP was to determine whether there was enough empirical research on role modeling, imitation learning, observational learning, and interpersonal influence to justify an effort to organize the findings and construct a reasonably complete set of practice principles based on the research.

2. Substantive content for practice principles, comprising a complete technology in the use of a particular technique (e.g., use of confrontation in group leadership), is derived from a thorough review of the existing research literature, once the initial assessment of the literature has warranted further work.

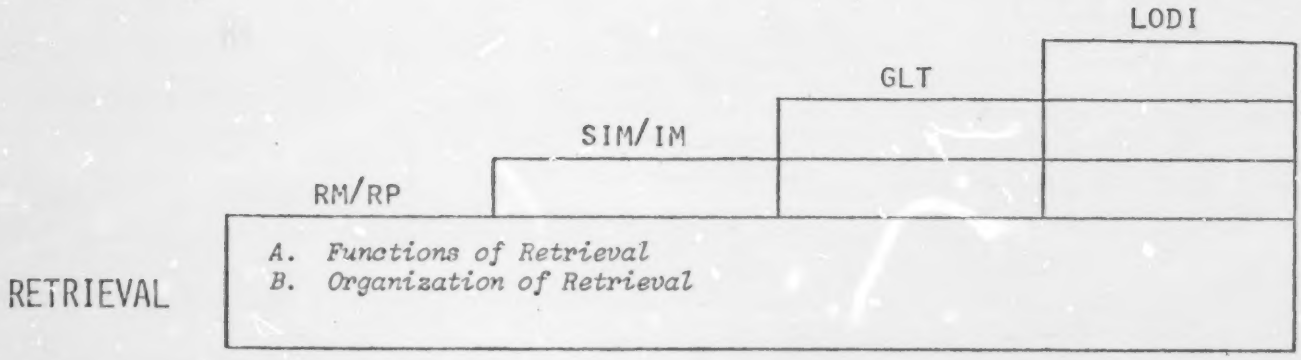


3. Knowledge of the potential users, their tasks, their work problems, and their organizational contexts is required in order to establish the constraints, limits, and interests of the potential users, so that the technology to be developed is relevant to them. In the retrieval phase, an essential function to be performed is to provide knowledge for selecting among alternative ways of implementing a particular practice principle. The research literature is usually broad enough to support several different ways of achieving a particular goal. For example, there are several different ways in which conflict within a group may be mediated; which one is to be chosen for communication to potential group leaders may then rest not only on which method is the most effective, but on which method is most consistent with what potential users already know, which they are most comfortable using, and which fits best into the context of manpower organizations. It is this feature - i.e., consideration of the potential adoptability of the technique or method - which discriminates the model described here from "behavioral engineering" or "systems development" models, in which the only criterion for inclusion is research evidence for the validity of the practice principle, without regard to the acceptability of the principle to potential users.

4. Research on knowledge diffusion, innovation, and change in complex organizations is reviewed for guidance to MSS in the management of its own diffusion tasks, and in the design of its research on factors influencing the adoption of innovations in the manpower system.

B. Organization of Retrieval Activity

1. Synthetic vs. Analytic Conceptual Schemes. For utilization objectives, the knowledge retriever should cast a wide net over all kinds of social science research in order to trap all the relevant knowledge it may contain. But the findings from the research must be organized in some fashion to make them intelligible and useful. This requires the retriever to develop a conceptual scheme for organizing the knowledge which differs from the conceptual schemes used by the social sciences. Academic social scientists, whose objectives are knowledge-production and theory-building, rather than utilization, organize phenomena into analytic conceptual categories (e.g., motivation, perception, emotion, etc.). But in the



real world, any action or event occurs on a number of levels, and integrates these conceptually distinct categories. Where the objective is to specify an action which implements empirical knowledge, a synthetic scheme must be developed in which the knowledge from a variety of different analytic categories is brought together for its bearing on a single action, an action sequence, or the components of an action. The most appropriate kind of conceptual scheme for this purpose is one based on the sequence of action steps that would have to be taken by a practitioner who is attempting to reach a particular goal in a "correct" manner (i.e., in a manner consistent with the research evidence). Thus we have found that searching the literature and organizing it in terms of action sequences (for example: how to tell when to use the technique, the first step in using the technique, the second step, etc., through to how to tell whether the technique has achieved its objective, and then what to do if it has not) is an effective way for presenting practice principles derived from research. Such a scheme tells the user of the technique all he or she needs to know to put the technique into practice, and in a form which makes it easy to move from intellectual knowledge of the technique to use of it.

The mismatch between this kind of synthetic conceptualizing and the analytic concepts used in the social sciences for identifying and organizing research requires the retriever to engage in a double coding process: the existing literature must be decoded from the concepts it uses, and then encoded into a scheme tailor-made for the particular user system.

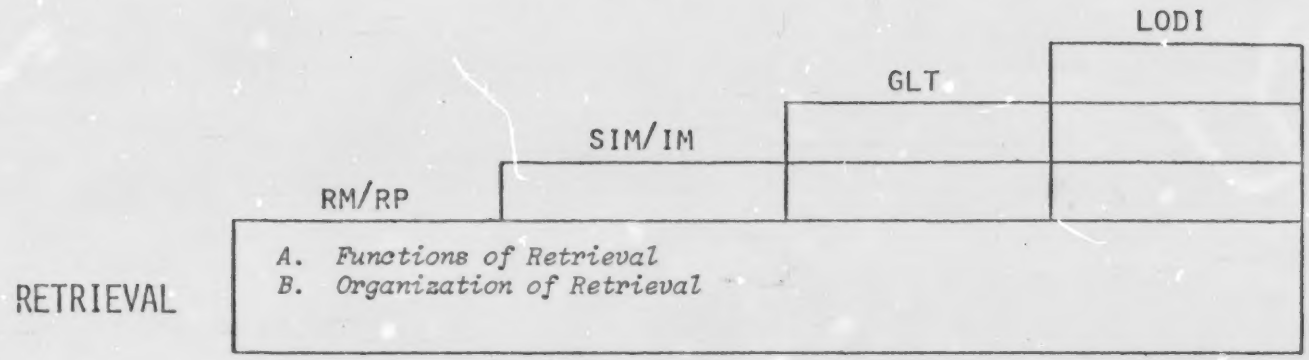
2. Coordination Between Retrieval and Conceptualizing. As the research literature is searched, more and more variables are found which play an influential role in the phenomena being studied. For example, literature searching revealed that age and status relations between a model and an observer influence the extent to which the observor will imitate the model's performance. It was therefore appropriate to add a section on "Choosing a Model" to the conceptual system in RM/RP and Sim/Im. This process of going back and forth between the research literature and the conceptual scheme continues throughout the period in which the literature is being searched and the conceptual scheme is being refined. In short, there is a dialetic between retrieval and conceptualizing, and neither can be closed off before the other is complete, without running the twin risks of omitting important research knowledge and constructing practice principles which are less effective than the state of knowledge permits. This point must be emphasized: it is a severe mistake to construct a complete concep-

tual scheme before the literature has been searched. To do so puts blinders on the retrieval activity which severely limits its comprehensiveness.

3. Goal-directed, Atheoretical, and Multidisciplinary. For utilization objectives, it is inappropriate and self-defeating to rule out any concepts, hypotheses, or research findings on the basis of the theoretical preferences of the retriever, or on the basis of the retriever's brand of social science (i.e., psychology vs. sociology vs. economics, etc.). Such biases can be avoided by anchoring the conceptual scheme in the goals to be achieved by the use of the technique(s) being developed, and then generating the scheme by searching the literature for any evidence regarding the conditions and actions which lead to that goal. A multidisciplinary staff ensures that the retrieval will not omit massive amounts of research associated with disciplines outside that of any one retriever's.

Implicit in this approach is an acceptance of the potential user's goals by the retrievers; these goals, rather than the retrievers' biases or preferences, then become the main point of reference for evaluating the relevance of research findings. Obviously, acceptance of user goals implies that the retrievers have knowledge of the kinds of situations which occur at the operational level in the manpower system, and the kinds of objectives that workers in that system are trying to achieve in those real-world situations.

When a conceptual scheme is rooted in the outcomes desired by a worker using the technique, the conceptualizer generates sub-goals (i.e., intermediate events which must take place in order for the desired outcome to be achieved). And for each of these sub-goals, research knowledge may be retrieved regarding the factors which influence sub-goal achievement. Thus the literature search process becomes increasingly more specific and focussed as the conceptual scheme is filled in, allowing the retriever to specify more and more narrowly the areas of research knowledge which are being sought from the social science literature. For example, an overall objective of getting an applicant to respond "correctly" to criticism by a supervisor might have as a sub-goal the presentation of a model of "correct" response to criticism. Focussing on that sub-goal directs the literature search to studies which might provide information about the characteristics of models who are most likely to be effective with manpower agency applicants, which



further directs the literature search to studies of the effects of age, sex, and race-ethnicity matching on social influence in two-person groups.

4. Terms of Relevance. The potential usefulness of a research report is evaluated by reference to several criteria, any of which may be sufficient to make a particular research report relevant:

a. Subjects: Research in which the subjects were youth, minorities, disadvantaged, unemployed, new employees, applicants for services, or who share other "ecological niche" characteristics with manpower agency applicants is more likely to be useful than research on college student subjects, children, and typical subject groups.

b. Setting: Research carried out in living institutions and about behavior in formal organizations is preferable to research carried out in laboratory or other contrived settings. The more similarities there are between the research setting and a manpower agency, the more relevant the research.

c. Social problem area: Relevant areas include, among others, poverty, unemployment, discrimination, conditions of work, worker alienation, and welfare dependency, and other such terms used to define social problems related to the work of manpower agencies.

d. Potential for yielding practice principles: Research on status variables which are not themselves changeable by anything a manpower agency can do (for example, social class status, or ethnicity-linked characterictics) is of limited utility. Such research may be used to identify applicant groups or types with whom the technology being developed might be used most (or least) effectively. Or it may suggest diagnostic clues for determining when to use the technique. For example, a study which shows that people occupying some relatively unchangeable status are more anxious than others in some particular kind of situation (for example, in interviews) provides a clue regarding when to use anxiety-reducing techniques. But research which demonstrates a relationship between two unchangeable statuses, or which concerns situations outside the possible influence or control of the manpower system is useless for generating practice principles. More useful research is that in which an experimenter compares the effects of two

or more treatments; that kind of research generates knowledge about what someone can do to achieve (or avoid achieving) certain effects. And if that kind of research also provides information about what kinds of subjects or what kinds of situations show the effect most or least, its usefulness is further enhanced.

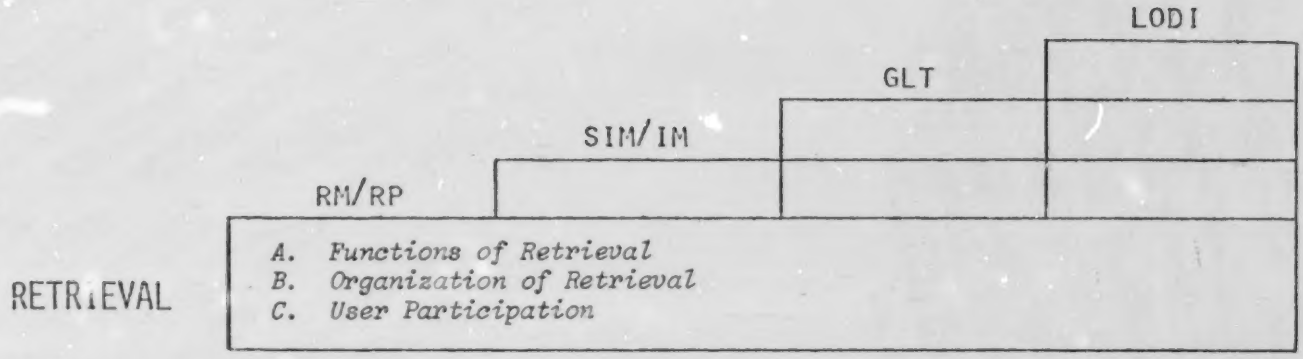
e. Observational procedures: When the methods used for measuring the relevant variables in the research are similar to methods used in manpower agencies, the research may contain relevant knowledge about subjects' behavior in those measurement or observational situations, no matter how irrelevant the main hypotheses being tested in the research might be. For example, research on the validity of responses to social survey interviews might turn out to be relevant if the research interviews included respondents' work histories, because manpower agencies typically use interviews to obtain applicants' work histories.

5. Missing Data and Conflicting Findings. Although the initial assessment of the research literature may have indicated that there was sufficient knowledge to warrant the development of a scientifically-based technology, the knowledge base is likely to be weak in some respects:

a. The technology may require some action components or steps about which there is no relevant research. In such cases, the retrievers must fall back on "practice wisdom" - i.e., the usual conventions of practice in the field, or in related fields. Again, knowledge of the work and techniques of the potential users is required for such gap-fillers.

b. There may be only one or two very weak studies available for specifying some component of the technology. In these cases, where the knowledge they contain is not inconsistent with "practice wisdom," they might as well be used: some research is better than no research as a basis for action. Where there is inconsistency with "practice wisdom," some assessment of how hard it would be to change the practice, in comparison with the weakness of the evidence for an alternative practice, must be made.

c. There may be inconsistent findings, with some research identifying one factor as important, and other research identifying another.



For example, one study showed that improvisation in role playing was the factor which led to behavior change by the improvisor; another study found that it was not improvisation but the amount of effort the role player had to put forth that led to the change. There are several conventions available for dealing with such inconsistencies and contradictions:

-Resolve the discrepancy by going either up or down the abstraction ladder, to a level where both sets of findings are in agreement. Then select an action which is consistent with both. For example, since improvision involves effort, it does not matter which concept accounts for the behavior change. Since both studies agree that improvisation involving effort leads to behavior change, improvisation is a justified step in the role playing process.

-Where it is not possible to resolve the discrepancy, choose the alternative which has the larger network of related research support, and/or has the larger effect on behavior.

-Where network support and power to affect behavior are approximately equal, choose the alternative which demands the least change by potential users (i.e., choose the alternative which is more consistent with practice wisdom, and/or which interferes least with other aspects of the potential user's role).

C. User Participation in Retrieval

There are several functions for potential users in the retrieval component:

1. Authenticity Screen

Whether practice principles adduced from the research literature are relevant and useful depends on whether they can be applied to real situations with which workers in manpower agencies must deal. Thus examples

of the use of the principles must be authentic, as perceived by potential users. Checking out the principles and examples of their use with line workers is therefore an important part of the retrieval process.

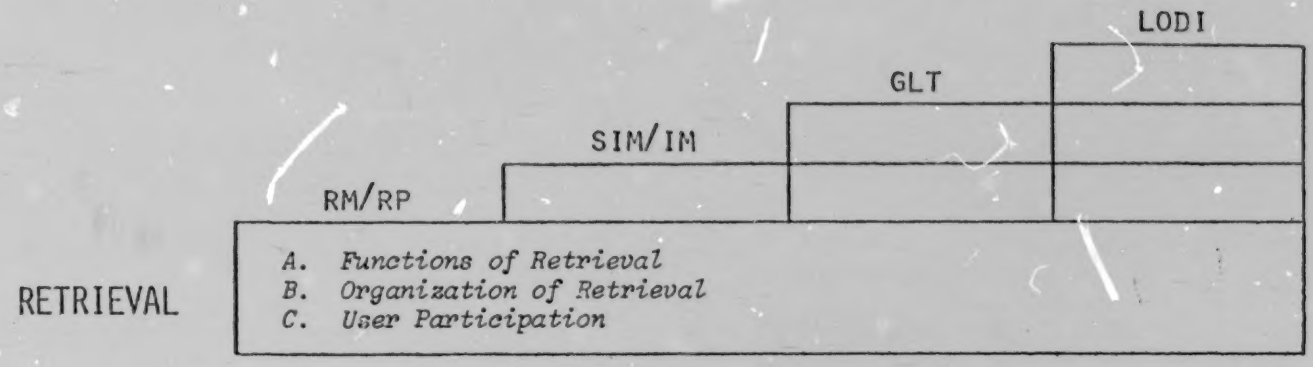
A related matter has to do with the ways in which tasks and work roles are allocated within local offices. A practice principle which requires a change in the distribution of tasks and roles (e.g., a technique which assigns typical counselor tasks to job placement workers, or assigns tasks associated with placement to aides or coaches) might violate agency structure to such an extent as to be unacceptable. Therefore, some evaluation by line workers of the extent to which the practice principles preserve worker role characteristics should be obtained from line workers.

2. Choosing Among Alternative Principles

As indicated earlier, it is frequently possible to adduce alternative practice principles from research, and/or to identify different ways of implementing the principles developed. Choice among the alternatives (in the absence of persuasive empirical evidence for the clear superiority of one over another) is made on the basis of what is acceptable and preferred by the potential users. This requires careful and sympathetic attention to feedback received from potential users by the retriever.

3. Language and Conceptual Level

While the retriever may be comfortable in using several different theoretical constructs for the same phenomena, potential users are usually less able to do so. When researchers and academicians refer to "clients," the manpower worker refers to "applicants." "Role playing" calls up in the minds of many manpower workers visions of Moreno-like psychodrama, rather than being taken as a generic term which covers related phenomena ranging from simple "What would you do if...?" questions to psychoanalytically oriented psychodrama with emotionally disturbed patients. "Probing" as a group leadership technique is a fairly standard generic term in the research literature, but stimulates associations of police interrogation procedures among manpower workers, so that "information seeking" turns out to be a much more acceptable label for the same thing. Practice principles must be stated in some language; irrelevant barriers to eventual utilization



can be removed by selecting linguistic concepts as they are understood by the potential user, rather than as they are understood by researchers and academicians.

It is also possible to err on the other side, by stating practice principles at the level of banalities. One then runs the risk of offending the potential users by underestimating their knowledge and skills. There is a fair amount of research which boils down to elucidating the obvious, and the retrievers, in the absence of knowledge of the user system, may pay as much attention to it as to research findings less familiar to the target audience. Again, input from potential users is necessary to moderate any tendencies on the part of the retrievers to think that they know what practitioners in the field do and do not already know.

4. User Goals

When a conceptual scheme for retrieval is anchored in the practice goals of the potential user system, it is important to be sure that the goals identified are in fact of sufficiently high priority that the techniques will be used. For example, role playing as a set of techniques for helping applicants deal successfully with work supervisors may be effective, but such a goal has much lower priority in the manpower system today than it had several years ago; on the other hand, facilitating successful placement through role playing (by increasing the applicant's chances of success in a job interview) has assumed a higher priority.

Social scientists typically identify organizational goals on the basis of public documents and statements describing the mission of the organization. However, this is usually inadequate as a way of identifying current priorities. Organizational statements are written in ambiguities and generalities, partly for political reasons, and partly for the practical purpose of covering short-term changes which take place so that it is unnecessary continually to revise the statements of purpose. It is therefore necessary for the knowledge retriever to learn about priority goals directly from the practitioners, who are in the best position to describe the kinds of outcomes which are valued in the operational context, and on which their work is evaluated.

D. Methods for User Participation

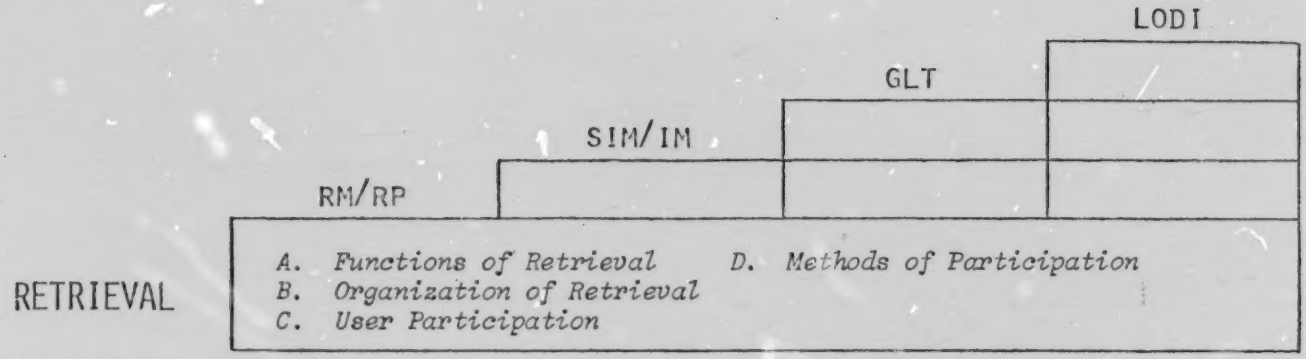
Given these functions of user participation in the retrieval componert, there are several methods for obtaining that participation:

1. Field Representatives

A staff member in each of several geographically scattered manpower agencies may be selected as a field representative. Through direct consultation with the retrievers, at both the retrievers' home base and in field visits to the agency, the retriever can acquire the kinds of knowledge described above from the field representative. Through the field representative, others in the cooperating agencies may also be contacted, and their inputs obtained.

Although field representatives may be paid by the retriever for their participation, and such payment facilitates their submission of formal reports, documents, case examples, or other such information, we have found that payment also has strong negative effects. Paid representatives try to isolate their activities on behalf of the retriever from their regular work activities in the agency, and try to minimize the extent to which their activities for the retriever invade their relationships with other line workers. The result is a loss of information and contacts. We have therefore found it more effective for such representatives to be designated by their agencies (or, preferably self-selected) without other remuneration. Field representatives then carry out their functions because they want to, not because they are paid to do so. Their rewards come from contact with the retrievers, other field representatives, and local, state, and higher officials, as well as from the intrinsic nature of the work itself. One consequence of not paying the field representatives is that the retriever must make fewer demands for formal reports or other submissions, with a compensating emphasis on informal information exchange through direct verbal contact.*

* When a formal submission by a deadline is necessary, we have found it effective to offer a fee to field representatives who are otherwise not renumerated for their project work, as an incentive and reward for the extra workload required by the deadline.



2. Retriever Staff

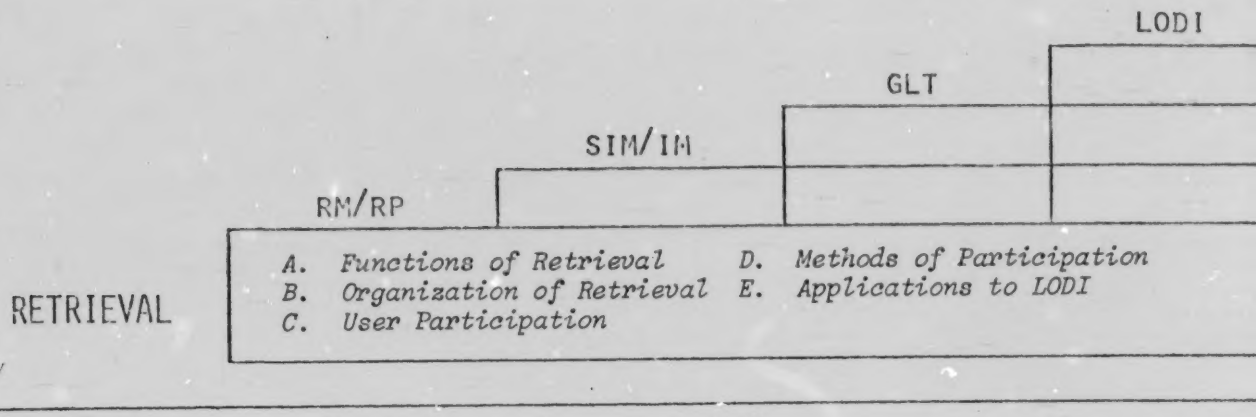
It is a common practice, and a useful one, for the knowledge retrieving organization to employ on its staff people who have worked in the target system in roles like those of the potential users. Though some of their knowledge becomes outdated as the manpower system changes, they frequently continue their social contacts with former colleagues, and thus function as a medium for communication with events in the target system at the operational level.

3. Pilot Testing

Pilot testing of first drafts of practice principles is an extremely effective way of obtaining feedback from samples of potential users. For example, the first try-out of the Group Leadership Techniques materials contained 16 practice techniques; as a result of the pilot testing in a Detroit manpower agency, the list was reduced to 13, and many of the techniques were changed in name and content to be more consistent with the kind of work performed by the pilot test participants.

Participation in the pilot testing is also an effective way of "hooking" manpower staff members to the project, so that they become interested and committed enough to continue to provide inputs beyond the retrieval phase. For example, the Detroit pilot test participants later helped draft the script for the film to accompany the written materials, acted as judges in screen-testing candidates for roles in the film, and provided other advice and suggestions regarding the media for communication and dissemination, all on their own time and after work hours without financial remuneration.

Later field testing of "second draft" materials, in a wider variety of agencies, provides a mechanism for broader input from a larger number of potential users of the materials, with a similar effect of "hooking" the participants. In the Group Leadership project, members of five manpower agencies from widely scattered sites around the country actually participated in the task of rewriting and editing the "second draft" based on their experience in the field testing. Although they were paid a small fee as an incentive to meet a deadline, the fee was hardly proportional to the time they invested in the task.



4. Formal Data Collection from the User System

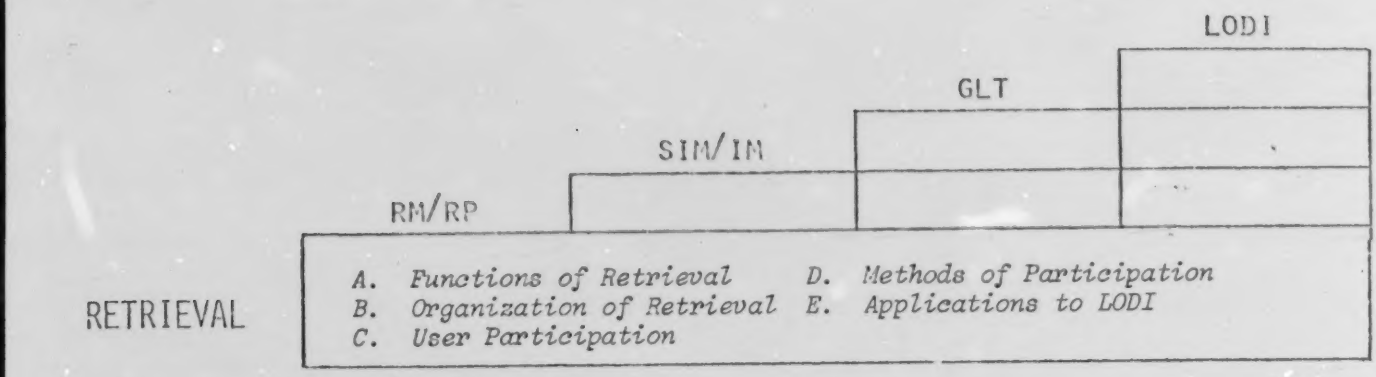
A fourth technique for user participation, used in conjunction with the others, is formal interviewing of potential users in their work places. Such interviewing permits the retriever to obtain reliable information about specific matters which might not otherwise come up in contacts with field representatives. The limited time and commitment demand that interviewing places on potential users, in contrast to the pilot and field testing, also allows coverage of a larger sample of potential users. Such data collection may take place prior to the formulation of specific practice principles. However, it must be preceded by enough research retrieval for there to be an outline of the conceptual scheme to be used both in the product and as a structure for the interviews. Formal data collection can also take place after the specific practice principles are formulated in order to evaluate them. For the latter case, self-administered questionnaires are appropriate, and were used in both Sim/Im and GLT for feedback from field test participants.

E. Applications to LODI Project

The first year of the LODI project was devoted to the type of literature review characterized earlier in this report. The culmination of that review was the development of a conceptual scheme for the LODI project, organized in terms of the operational sequence of steps in local office decision-making and implementation of innovations (i.e., assessing needs for change in local office operations, defining operational objectives to be achieved by a change, generating alternative strategies for achieving the objective, evaluating potential alternatives, trying out solutions, evaluating the try-out, etc.).

That conceptual scheme then provided the framework for an interview schedule which was used for collecting data from local office managers, middle-level supervisors, and line workers. Data were collected in over 40 local offices in four Regions, on the following matters:*

* Collection of these kinds of data prior to the design of practice prin-



-Kinds of changes and innovations that have been introduced into the local office in the past, at the discretion of the local office.

-Methods used in identifying the need, stating objectives, generating and evaluating solutions, and trying out solutions which led to the innovations cited.

-Changes which local office staff would like to make or think would be desireable, and problems in local office operations which such changes would address.

-Priorities among the potential topics to be treated in LODI materials.

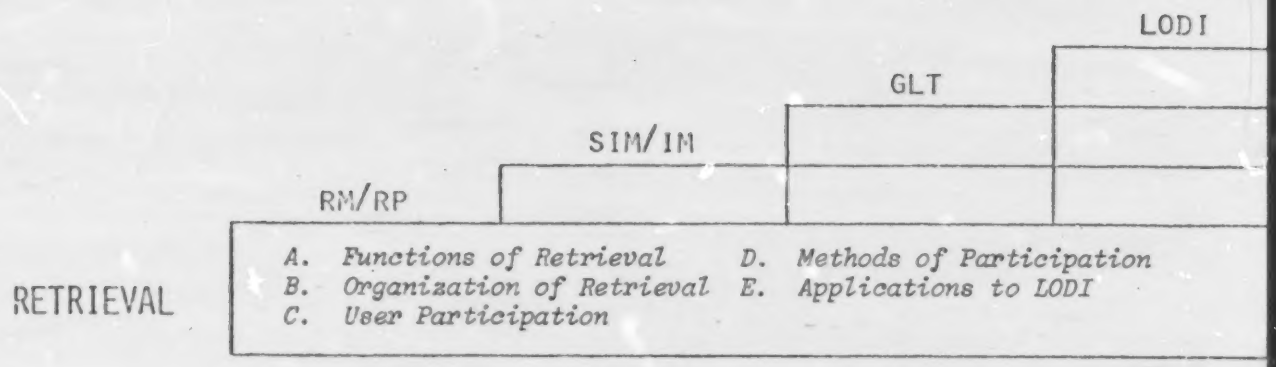
-Preferences regarding such matters as where, how long, and through what instructional techniques the training in LODI might be accomplished.

-Operational and structural constraints on the range of solutions to operational problems which might be implemented in local offices, and on the processes of decision-making, obtaining resources, authorizations, etc.

These data are being used for all the purposes outlined earlier for user participation in retrieval: as a check on authenticity of LODI contents, as a guide to role and task assignments consistent with current local office practice, as an input to the kinds of technical terms and concepts to be employed for communication purposes, and as a basis for prioritizing among goals, topics, and media for communication and training.

In addition to this large scale formal assessment, the LODI project is also using the more informal media for potential user participation.

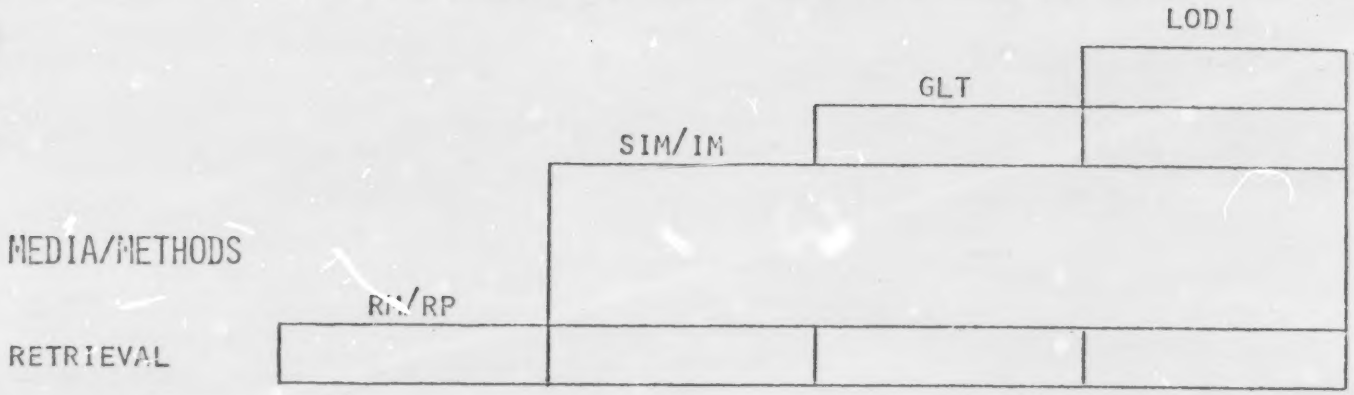
(Con't) ciples is unprecedented, not only in the manpower system, but in any research and development on the diffusion and utilization of social science knowledge.



A first draft of the materials will be tried out with MSS staff in the role of seminar leaders on site in a local Detroit setting. The participants in that seminar will have two roles: as learners of the techniques included in LODI (thus providing a first evaluation of the effectiveness of the training) and as critics and evaluators of the materials (both content and style). Following a revision based on that seminar, a second draft will be pilot-tested, but on a self administered basis in another agency setting, and again subjected to review and revision by the participants. Then a third and larger scale field testing of the materials in several geographically scattered manpower agencies will be carried out, leading to a final revision jointly by MSS and the field test participants.

As in previous projects, feedback from the pilot and field testing will be through informal face-to-face exchange, and through more formal questionnaire methods.

Unlike previous projects, the potential user participation in the retrieval phase is being extended upward through the system, so that those in positions related to the potential users but above them in the hierarchy (i.e., state, regional, and federal level officials) will also make inputs to the practice principles developed in LODI for local office problem-solving, innovation, and decision-making. This is being accomplished through both informal and formal contacts with regional and state officials (hopefully through the Breech Academy facility), and through the formal designation of liaisons to the project from operational units in USES. These liaison persons participate in meetings of the MSS Advisory Committee, and through other ad hoc meetings in Washington.



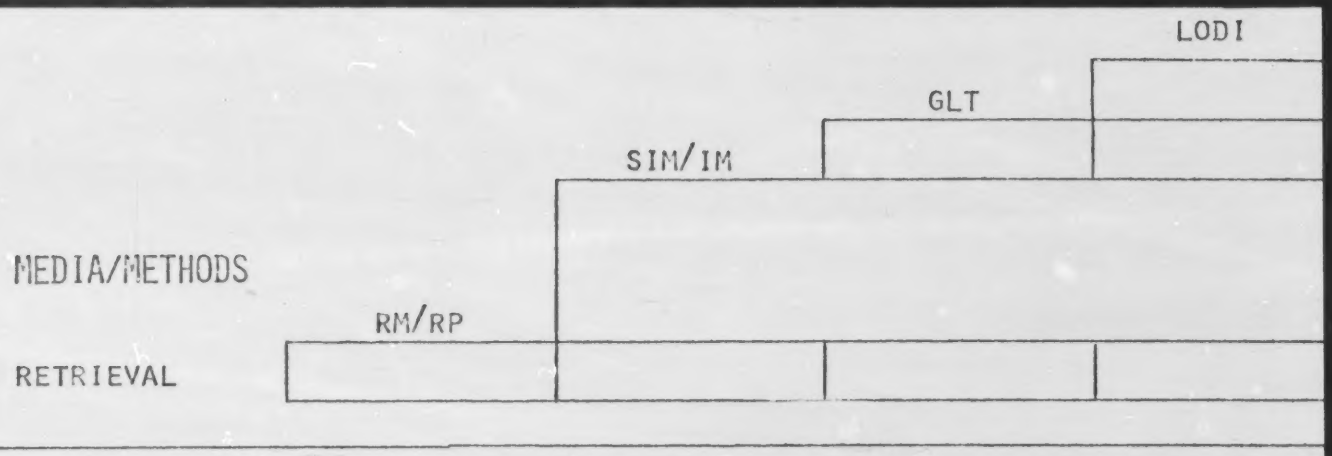
II. MEDIA AND METHODS FOR COMMUNICATING SOCIAL SCIENCE-BASED INNOVATIONS

Given a complete review of the research literature, there are two transformations which must take place: 1) the practice principles must be put into an applied form; and 2) they must be adapted to some medium for communication to potential users. In designing these transformations, considerations of the utilizability of the principles, of the communicative efficacy of the medium, and of the receptivity of the potential users play important roles. It is the consideration of such factors which distinguishes this model of innovation diffusion from the more common practice of issuing reports and articles as summaries of research findings.

Where the objective is actual innovation through utilization of new knowledge, one must go beyond a mere transfer of messages based on research. Practice principles typically summarize knowledge implications in a generalized and abstract manner. However, if they are to be used, they must then be applied directly to practice situations. To illustrate: a summary of the principles on which the internal combustion engine operates communicates cognitive knowledge, but it would take extraordinary deductive power on the part of a reader to be able to make inferences about how to drive a car from such knowledge. Even then, a summary of the practice principles for internal combustion engines would not contain information which would enable the reader to drive safely and strategically. These qualitative aspects of implementation go beyond the kind of knowledge associated with how engines work, to include their application in concrete practice situations. In effect, a statement of practice principles of working with applicants is to a utilizable product as a technical account of the internal combustion engine is to a driving manual.

With one difference: those who are not drivers are usually highly motivated to read a driving manual in order to learn how to drive, while manpower agency workers who already use some ways to do their jobs are unlikely to be motivated to read materials aimed at changing their work performances.

Thus the second transformation - translating the applications into some media of communication - poses several requirements:



-The media must be less tedious than reading, and attractive enough to arouse interest in potential users, so that they are willing to expose themselves to the message by "tuning in."

-The media must go beyond the presentation of cognitive knowledge, to include models of correct performance and to permit approximations to practice in using the knowledge (much as a driving manual must be supplemented by driving simulators and/or behind-the-wheel practice).

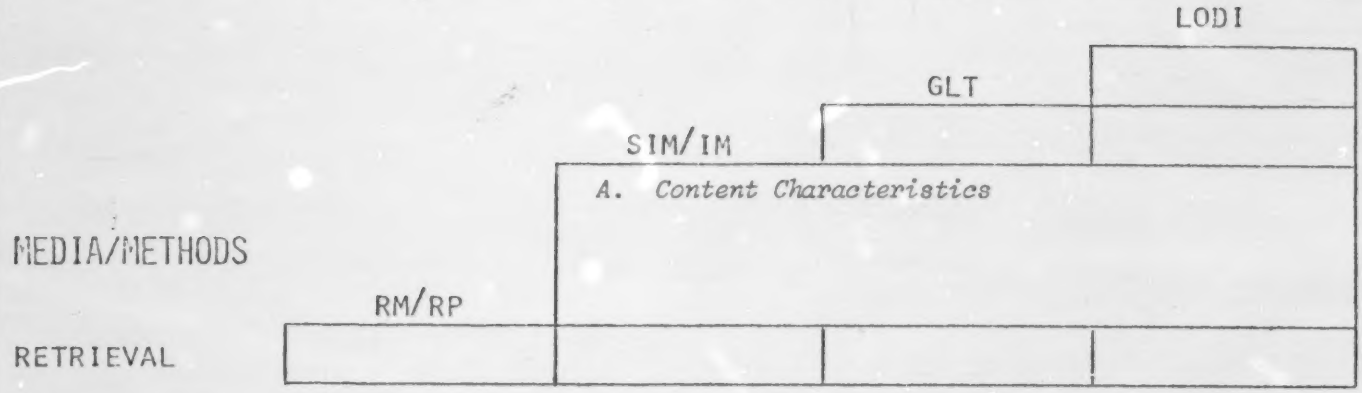
-The medium must be capable of delivering its message to a large, geographically dispersed system whose members have production responsibilities that limit the amount of time they can devote to receiving messages about new methods for doing their work.

MSS has interpreted these requirements as a need for products which have three important characteristics:

1. The products must be instructional in the sense that they teach new performances, job behaviors, or techniques, rather than simply communicate information about performance, behavior, or techniques.

2. The instructional products must be self-administered, so as not to require instructional expertise beyond the capacity of the user system to supply, and so as not to require complex administrative arrangements to supply such expertise at the right time and place.

3. The self-instructional materials must be "parachutable" - i.e., completely self-contained, diffusable, and productive of utilization of the techniques being communicated without requiring on site participation by experts or a large staff of field agents to communicate directly with potential users in the manpower system. In other words, the materials should, as much as possible, diffuse themselves and result in utilization through processes which the materials themselves generate. We consider "parachutability" a major characteristic, if social science knowledge is to be effectively and efficiently diffused and used in the manpower system.



These characteristics impose conditions on three aspects of media and methods for communicating social science-based innovations to the manpower system: conditions affecting the content to be communicated; conditions affecting the method of teaching and learning; and conditions affecting the choice of media contained in a parachutable package. These will be discussed below, followed by a review of user roles in the media and methods development component of the overall model, and a presentation of the ways in which these aspects of the model are being implemented in the LODI project.

A. Conditions affecting Content Characteristics

Actual try-out of the techniques being communicated by a package, as well as exposure to the package itself and to the messages it carries, is affected by several characteristics of the contents:

1. Trialability.

a. Both the instructional materials and the techniques they teach are more likely to be used if they are segmented, so that they can either be tried out on a small scale, or only a portion of them tried out.

b. They are more likely to be used if they are not so tightly programmed and prescribed that they cannot be adapted to local circumstances (e.g., time and place arrangements, local needs to be addressed by the materials, etc.). Thus there should be options regarding such matters as how long to run a training session, what specific issues or applicant problems are to be discussed by a staff group using the materials, who is to chair the group, etc.

c. They are more likely to be used if the try-out does not contain a possibility for permanent or long-term damage to individuals or to the organization. That is, if a try-out is unsuccessful, it should not result in significant harm. This can be arranged by making sure that the segments available for try-out do not consume scarce resources, and are small enough or modest enough in their scope that they cannot do damage if they do not work. In short, the try-out needs to be reversible.

MEDIA/METHODS	A. Content Characteristics			
	RM/RP	SIM/IM	GLT	LODI
RETRIEVAL				

d. The materials must contain all the information and materials needed for the technique being taught to be correctly implemented. Users should not need to have any skills or materials beyond those already available in the agency or communicated in the materials in order to use the package and to apply the techniques taught.

2. Compatability.

a. The technique being communicated is more likely to be used if it is seen as contributing to the achievement of user goals. One way to achieve this is to illustrate the techniques by examples drawn directly from the actual manpower agency work.

b. The technique and the package of materials are more likely to be used if they do not require any gross change in agency structure. Application of practice principles should be designed in a way that does not unnecessarily violate hierarchical relationships, the organization of services and staff, or the relationships among worker tasks in the agency.

3. Minimal Costs.

a. The training materials should be more economical than other methods of delivering instruction, and/or comparably more effective than competing methods. Designing the content of the training package so that it can be used in the local office by existing staff is one way of reducing training-associated costs such as travel expenses to training centers, lost work time consumed in travel, interruption in the flow of services caused by prolonged absence from the job by those in training, expensive consultants and lecturers, etc. Further, the materials should contain more knowledge than can be transmitted by other means, and/or a greater proportion of the knowledge contained in them should be directly relevant and applicable than is usually the case with out-service training and such common arrangements as university-based short courses and institutes for manpower agency workers.

b. Use of the techniques communicated should not reduce the volume of work that a user can turn out without the technique, and/or use of the technique should be compensatingly more effective for the volume of

MEDIA/METHODS	RM/RP	SIM/IM	GLT	LODI
		A. Content Characteristics		
RETRIEVAL				

work it demands. For example, applications of simulation and imitation learning should be designed in a way that does not require longer or more frequent counseling sessions with applicants than is required without these techniques; use of group work increases the number of applicants who can be served, per unit time, etc.

c. Use of the training materials and of the techniques should not require extensive clearances, permissions, reporting, and administrative arrangements beyond those normally required for agency administration. These costs can be minimized by making the training materials freely available on request, and by avoiding the prescription of any actions which violate agency policy or which go beyond the range of discretion permitted to the user and his or her local organization. All of the materials required should be obtainable from the same source, so that multiple requisitions and coordination of orders for films, books, and other supplies is not required.

d. The training materials and the techniques should not require the use of equipment which is too complex or unreliable for local use, which is not commonly available to the user and his or her organization, or which requires long-term planning and complex requisitioning and justifications to be sent to the State office. For example, at this time the use of videotape recorders and Super-8 film has to be ruled out on one or another of these bases.

e. The materials and the techniques are more likely to be used if they do not require that staff members take on roles in which they are uncomfortable, or which violate the kinds of satisfactions they seek from their type of work. A technique which removes counselors from direct interaction with applicants (for example, by making him or her a full time consultant to a group of paraprofessionals) will be resisted by most counselors, to whom helping distressed people is an important source of work satisfaction. In order to minimize role conflict or the discomfort which might be produced by altering some part of the potential user's role, participation in the training ought to be voluntary, and there should be self-selection, as much as possible, into the roles required for participation in the training (i.e., into the role of convenor of the workshop group in GLT). Implementation of the techniques should be flexible enough

MEDIA/METHODS	A. Content Characteristics			
	RM/RP	SIM/IM	GLT	LODI
RETRIEVAL				

that individual staff members can assimilate the techniques to their own "styles" of work. Some ways to achieve this are to present multiple examples of the technique reflecting differing styles of implementation, and by presenting the techniques in such a way as to identify them with performances with which the potential user is already familiar and self-confident.

4. Maximize Benefits.

a. The training materials and the techniques they teach are more likely to be used if they are seen as effective and valid. Presentation of evidence based on user evaluations of the materials, in a simple and direct form, is one way to communicate their effectiveness. Inclusion of references to the research literature on which the contents are based is an important element; although users typically do not read the references section (it should therefore be separated from the main body of the materials), their confidence in the materials is increased by knowing that the references exist and can be examined.

b. The techniques are more likely to be used if they maximize the aspects of users' jobs which they find pleasurable and in which they are successful, and minimize the more onerous and unsuccessful portions of their work. Thus techniques which can be successfully applied to situations that staff members otherwise find difficult or unpleasant, and/or which enhance their opportunities to engage in tasks which they enjoy, are more likely to be used, and the training materials should therefore illustrate the technique with such examples.

c. The training materials and the techniques are more likely to be used if they are seen as enhancing the professional competence and status of the potential users. For most users, this implies presenting the techniques in such a way as to increase the user's sense of his or her own autonomy and professional judgement, and/or of amplifying the user's repertoire of techniques to include those associated with advanced levels of professional functioning. It is an advantage if the techniques are also seen as useful in enchancing the careers of potential users.

MEDIA/METHODS	RM/RP	SIM/IM	GLT	LODI
		A. Content Characteristics *B. Methods of Teaching and Learning*		
RETRIEVAL				

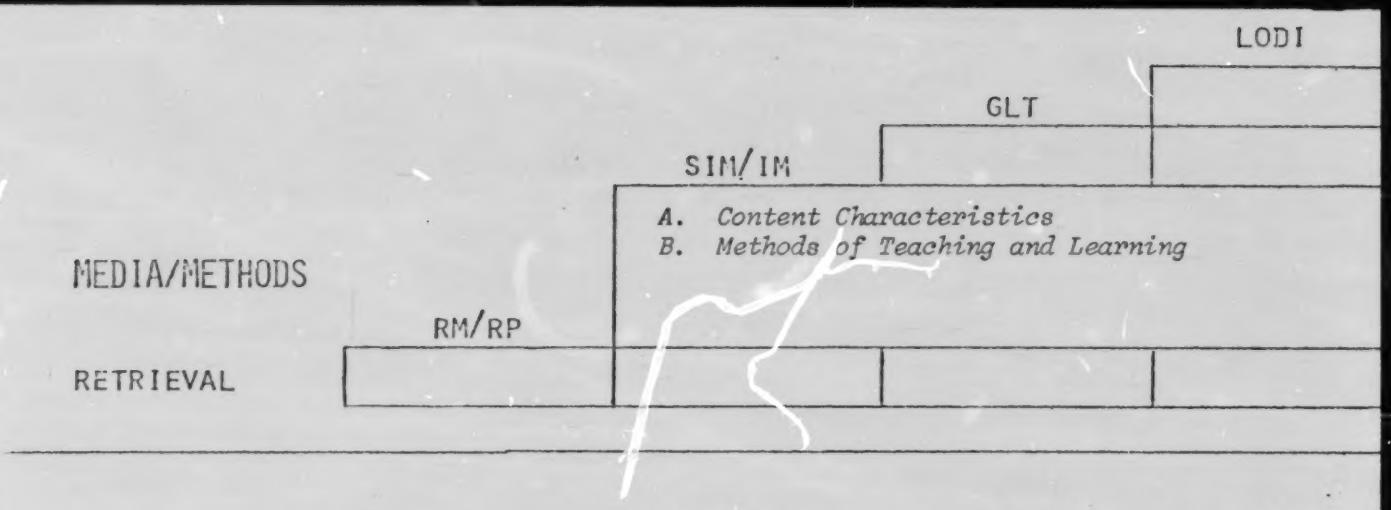
5. Novelty

a. Both the training materials and the techniques they communicate are more likely to be used if they occupy a middle ground of novelty. If they appear to be too great a departure from the familiar, they are likely to be seen as unacceptably "way out;" if they are too much like what is already known, they will not attract interest or attention. Use of familiar terms in naming new techniques is one device for achieving this middle ground, as is presenting familiar (but unused) techniques in a new language.

In summary, if there is to be a higher probability of use than is typically the case with training materials and programs, the contents to be communicated and the package itself should have certain characteristics. Designing materials so as to make them trialable, compatible, unburdensome, beneficial, and novel to the potential user makes the difference between an academic approach and a use-oriented system for research diffusion and utilization.

B. Conditions Affecting Methods of Teaching and Learning

A complete instructional system designed to induce utilization of what is learned is more likely to be effective if it includes a number of different ways of teaching and learning, each of which adds a unique and important component to achieving the utilization objective. The first component is purely informational, communicating what, why, how, and when to engage in the behavior being taught (i.e., cognitive learning). The second component presents the learner with models or examples of the use of the behavior (observational learning). Presentation of the model needs to be followed by the learner's imitation of the model, so that the learner gets practice in the behavior by actually performing it (i.e., experiential learning). A fourth component is one in which conditions are arranged to provide the learner with a situational context in which his or her performance of the behavior can occur as naturally as possible, and in which he or she can receive feedback on the quality of that performance. Finally, there will be greater actual utilization in daily practice, outside the learning situation, if the learner is given an opportunity to participate in shared problem-solving and decision-making with regard to what is being taught. Implicit in such discussion is a public commitment to following through



on the behaviors learned and practiced; such public commitment increases the probability of actual use. Designing training materials so that they include a planned sequence of these kinds of teaching/learning components facilitates movement from learning about new social science-based knowledge to use of that knowledge in practice. This movement is further reinforced when the learning materials use the principle of reflexivity; i.e., they make consistent use of the same principles that are being taught. For example, a staff member is more likely to learn how to use role modeling if the teaching materials use modeling as a method of instruction.

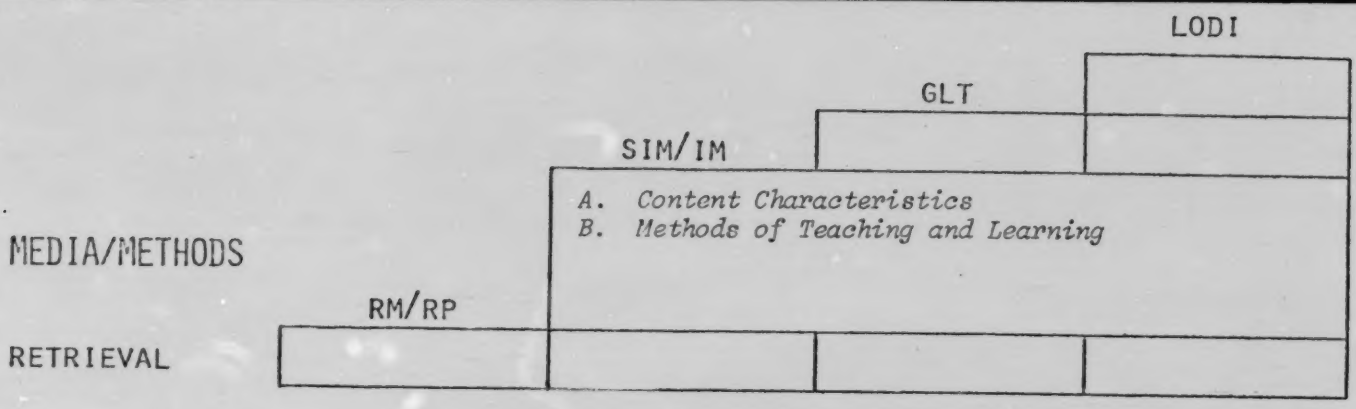
1. Cognitive Learning

Although not strictly necessary for learning to take place, the use of verbal instruction greatly facilitates correct performance. We have also found that manpower workers want to know why a particular procedure or technique works, in addition to how to use the procedure, even though such explanations are not absolutely necessary for correct performance. The main trick in designing verbal instructions is to make them clear and concise, through a simple and direct language structure which does not at the same time talk down to the audience and to include explanations without requiring the reader or listener to wade through complex theorizing, technical jargon, and elaborate justifications. The expert judgement of external observors is highly unreliable in this regard; field testing brings many surprises to the drafter of verbal instruction.

2. Observational Learning

People find it very difficult to translate a verbal description into an action. The more visible or audible components in the content being taught (e.g., actions, words to be spoken, or a product to be generated), the greater the need for some appropriate exemplars of those components. Such models communicate cognitive instruction, implicitly help to define the instruction in concrete terms, and also communicate more information than can be efficiently carried by words (e.g., what the behavior or practice looks like, sounds like, etc.). Further, examples help to communicate a sense of familiarity with the new behavior, so that it seems less outlandish than it may sound when described.

In general, showing someone performing the behavior being learned works better if the person shown occupies a status less than the highest or most



perfect ideal attainable. People tend to compare themselves moderately upward, and to imitate those who are somewhat more skilled than they, but not so far removed from themselves that they cannot hope or expect to do as well. Thus the model ought to represent a readily attainable standard.

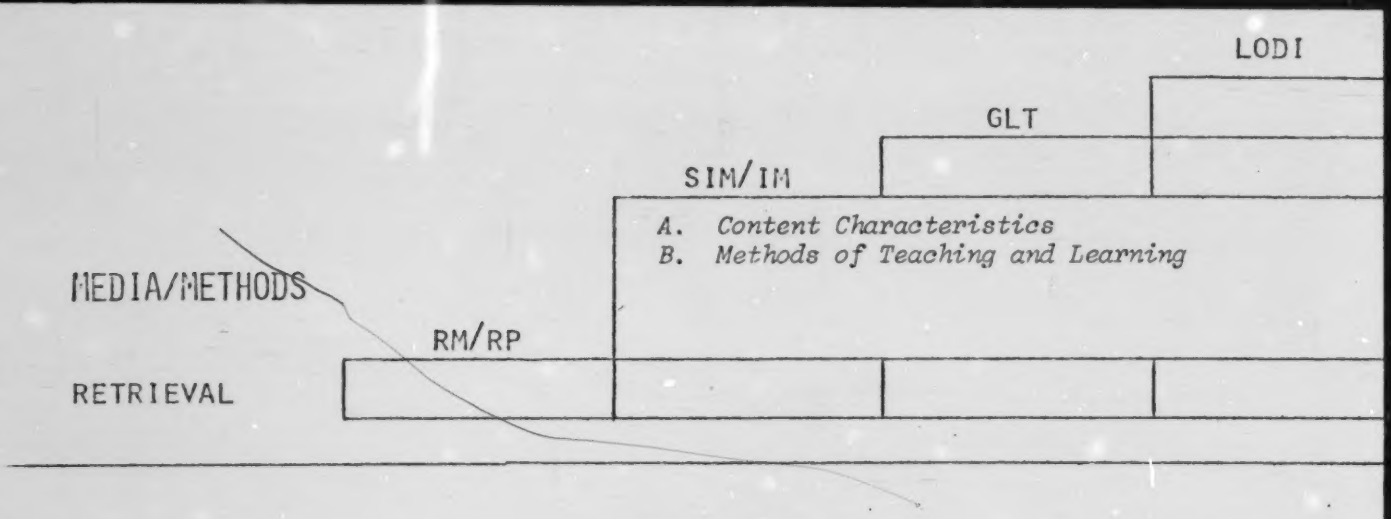
3. Experiential Learning

While observation of a model appears to be sufficient for learning to take place, it is not sufficient for performance. Performance requires that the learner imitate the model, thus acquiring practice and familiarity with the behavior, providing an occasion for corrective feedback, and deepening the learning by adding a sense of what the new behavior feels like, in addition to what it looks and sounds like. In effect, then, the new behavior becomes personally experienced. For some behaviors, it may be sufficient to simply remind potential users of common experiences they have had in which the same behavior occurred, but there are clear advantages to bringing that behavior into the learning situation by having the learner repeat it or imitate it: the behavior comes alive, is less subject to the distortions of memory, and can be examined and discussed by the learners.

4. Behavioral Shaping and Feedback

Practice exercises, simulation games, and role plays may be used to produce experiential learning. More subtle and indirect, but also more natural, are arrangements for so structuring the situation that the desired behavior spontaneously occurs. For example, asking a member of a Group Leadership Techniques Workshop to participate in a discussion of the group's goals increases the likelihood that the member will use Summarizing, Mediating, Rewarding, and others of the techniques taught in the Workshop. A tape recording of the discussion then provides a focus for feedback and discussion of the member's use of the behaviors of interest.

The requirement of parachutability creates the greatest difficulty for providing feedback on the learner's performance. Ordinarily, the provision of corrective feedback requires an on-site expert to evaluate the learner's performance against some standard, especially as the learner is often unable to discriminate the difference between his performance and the standard. One way to approximate feedback is to provide the learner with an



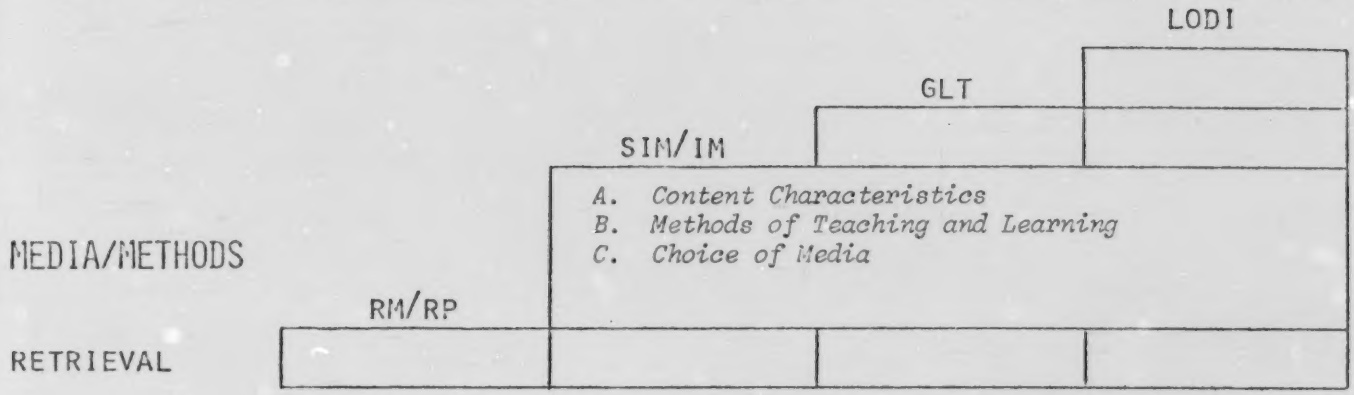
example of correct performance after the learner has given a response. The learner is then asked to compare his or her response with the "correct" one. This was the procedure used in Sim/Im. Another way to handle the problem is to design the learning so that it takes place in a group, as in GLT, so that each member of the learning group can get feedback from the others. This requires some trade-off on utilization, in that the greater complexity and administrative burden posed by training in groups makes the training materials less flexible than is the case where the individual worker can use them in a self-paced way, and at his convenience, as in Sim/Im.

5. Shared Problem-Solving, Decision-Making, and Public Commitment

There are several objectives to this component of the learning process: 1) to provide learners with options as to how they can incorporate their learnings into their practice; 2) to expand the range of possibilities that any one learner might think of, by including the ideas of others; 3) to develop solutions to unique local problems affecting the use of the behaviors learned (i.e., principle of compatability); 4) to give participants opportunities to use the behaviors they have learned during the discussion process; and 5) to elicit public commitment by the learners to use behaviors they have learned, with group sanctions, group support, and the development of new group norms to reinforce and maintain such commitment. It is in this way that a group format as the context for learning establishes a natural and self-generating mechanism for encouraging the utilization of what has been learned in the group, thus making parachutability possible.

6. Reflexivity

Quite literally, "the medium is the message." When Group Leadership Techniques Workshop groups learn about "Negotiating a Contract," they do so by negotiating a contract (i.e., a working agreement) among themselves for the management of their Workshop. More comprehensively, they learn group techniques by being in a learning group where they can observe and modify their own processes. They not only have an opportunity to practice what is being preached; they also acquire a sense of the validity and effectiveness of the behaviors being taught. By using the techniques being taught as the method of instruction, learners also acquire direct experience



with the technique in a relatively safe environment (i.e., principle of reversability). As a result, the technique is no longer strange and foreign to them, making utilization of it in their own work seem more natural and familiar.

In summary, use of a variety of teaching/learning methods strengthens and deepens learning, and eases the transition from learning to actual use of what is learned.

C. Conditions Affecting Choice of Media

1. Media Capabilities

The intrinsic capabilities of a particular medium is the main criterion for selection. It is wasteful to attempt to use film, for example, as a medium for communicating contents with few important visible components, and/or with non-moving visible components. The disadvantages of using film where it is not necessary go beyond simple wastefulness; as one goes up the hierarchy of media to those which reproduce reality more and more completely (as film reproduces both sight and sound), simplicity, ease of use, reliability, and flexibility decline. Turning back the pages of a book or manual to locate a point one wishes to review is simple; locating the comparable point on a tape recorder is more complex, and rewinding a film for the same purpose is a pain in the neck.

In general, print is not an adequate medium for illustrating interpersonal techniques used in face-to-face work with manpower agency applicants. However, using visual media for such purposes involves some over-kill, if the techniques presented are used primarily in one-to-one situations. Visual components do not communicate enough more information than auditory components to justify the additional expense and bother. On the other hand, visual media are necessary for presenting techniques used in face-to-face work with groups, because users cannot discriminate among the voices coming from a single track tape, and because of the relatively greater importance of non-verbal communication in group work.

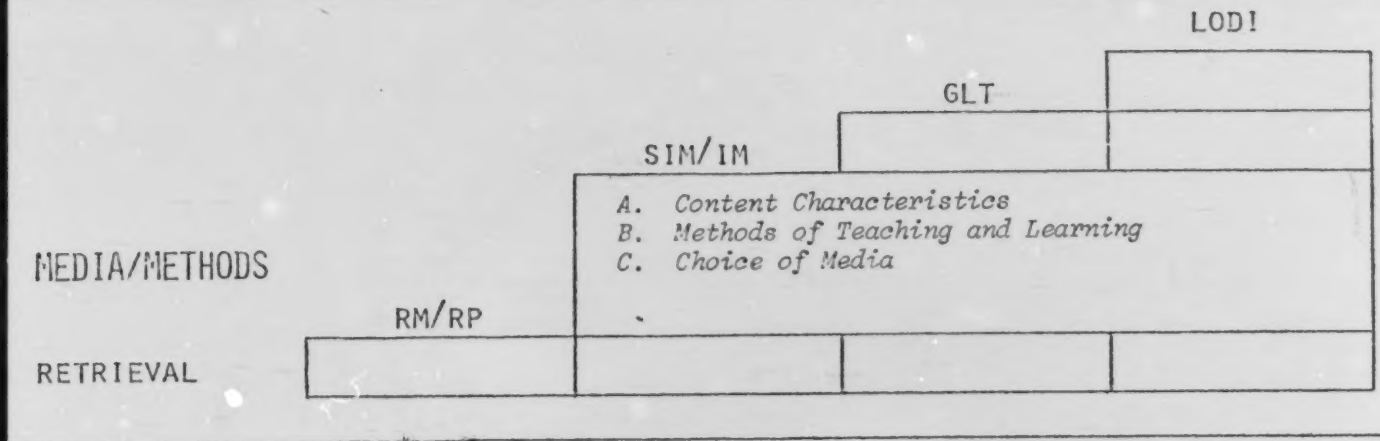
Filmed and audiotaped images are transitory and ephemeral in nature, and thus put a strain on the user's memory, whereas printed images are enduringly available. Where auditory and visual media are used, it is therefore important to supplement them with printed summaries or outlines which can serve as handy reminders to the learner of what was seen or heard, and learned. When print is used for such purposes, it is important to avoid lengthy word-for-word reproduction of the auditory components of the other media; users object to the redundancy. Further, such redundancy is counter-productive. For review and summary purposes, briefer and more telescoped versions are more useful. Various typographical devices to highlight important points are also effective.

Reading is self-paced, while audiotape and film are externally and machine-paced. One consequence is that the learner cannot stop audiotape and film as readily as he can stop reading to mull over a point and get it straight in his mind. This limits the number of concepts which can be effectively communicated at any one sitting through media other than print. It is therefore more effective to use several short film or tape segments, with breaks or activities between them, than to attempt to include as much information in one sitting as one can include in a manual.

Because reading is a private or individual activity, there is a temptation to avoid using "learning time" for reading; learners are asked to read in advance of the instructional session. However, experience indicates that people seldom read in advance, and the expectation that reading be done in advance has the counter-productive effect of encouraging people to fake it by not doing the reading and hoping that they will understand enough during the instructional session for them to get by. It is more effective to accept reality and accomodate to it, by setting aside time in the instructional session for participants to do the required reading, and to keep the reading brief enough that it can fit in.

2. Use of Media Experts

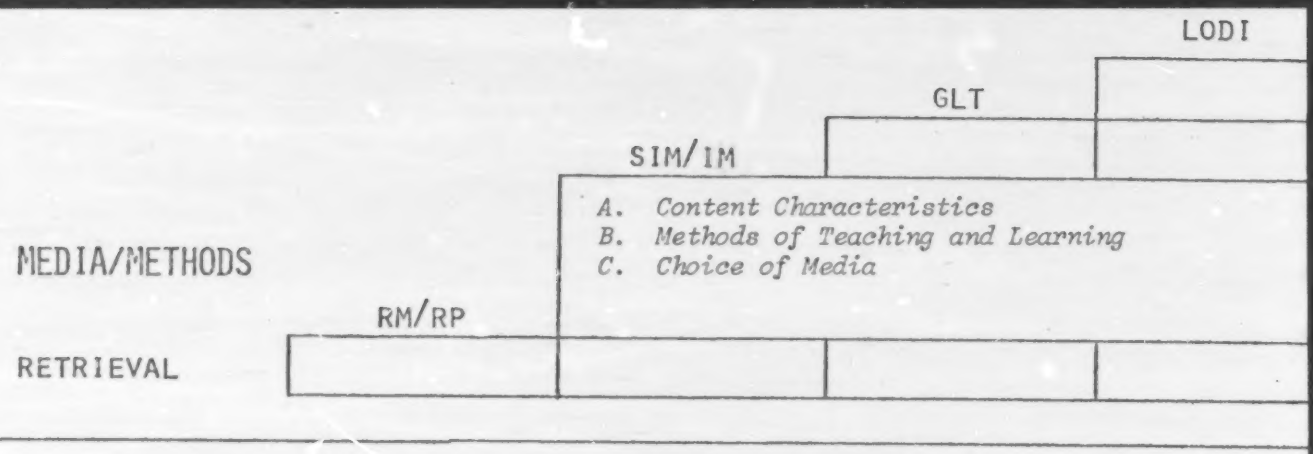
Media experts tend to come in types: film people prefer film, and recommend it wherever possible, even if it violates the principles discussed above; radio and audiotape people try to adapt communications to their medium, rather than recommend the medium most appropriate to the



communication problem. The result is that the choice of a medium is more likely to be made on the basis of the consultant's expertise than on more objective grounds, if the consultant is called in prior to the decision on media. However, once a choice has been made, it is essential to obtain consultation from experts specific to the medium chosen, before actual development of the instructional materials takes place. Useful videotapes and audiotapes for in-house purposes can be readily made without such expertise (MSS made one for a Youth Opportunity Center with a portable videotape recorder and only amateur experience, simply by recording a one hour conversation among a group of former applicants who were asked to discuss their experience in the agency and then editing it down to 17 minutes; the YOC then used the 17 minute version, converted to 16 mm. film format, to orient new applicants to the agency). However, standards must be higher for mass distribution (other people's home movies are seldom as interesting as one's own), and these standards require expertise beyond the amateur level. For example, while MSS staff members are adequately skilled in writing English for reporting purposes, scripting dialog for audiotapes is an entirely different matter, and scripting for TV or film is still another, because visual images supplement the dialog and permit long periods of silence without leaving the learner mystified about what is going on. Even the choice of illustrative examples and illustrations is affected by media considerations, requiring the participation of a media expert while the contents of the training materials are being developed.

Print is so ubiquitous that many people consider themselves sufficiently expert to design contents for print media without consultation from experts. Nevertheless, it is MSS' experience that to do so runs the risk of failure to take maximum advantage of the capabilities of print, or to use formats, paper, bindings, etc., which are both effective and economical. Common mistakes are failures to use typography, lay-out, and headings to break up solid (and intimidating) masses of text or to provide running cues to the reader regarding where he is in the text, where he has been, and where he is going.

A final note on media choice is that implementation takes an enormous amount of time, compared to the simplicity of report-writing. Recording studios, actors, printers, and content experts are busy and have competing demands on their time, so that there are often long delays between any



input and an output, and it is enormously difficult to set meeting and appointment times when all those involved can be present. This lengthy media production time must be taken into account when planning an overall project.

3. Media Production

Several considerations are relevant to actual production:

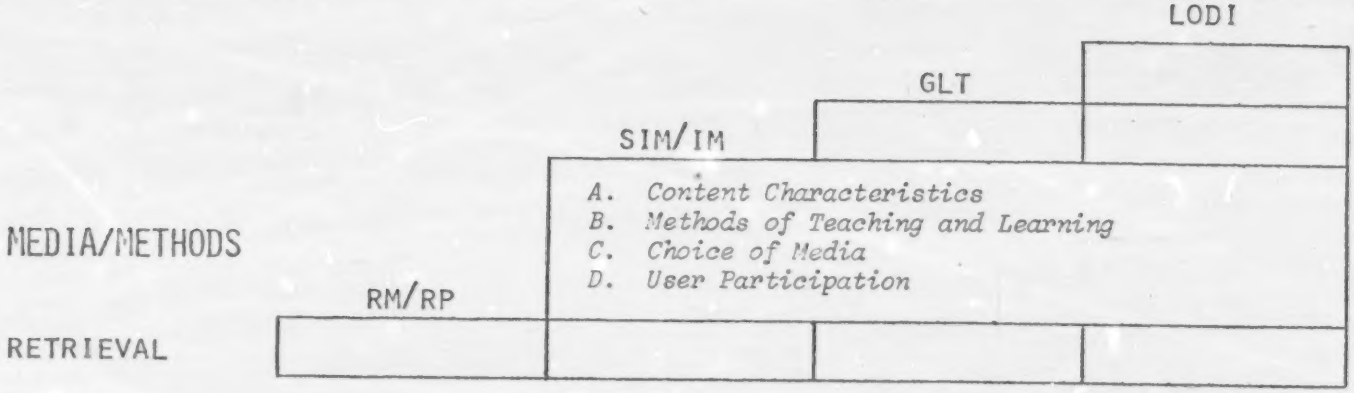
1. The content experts must not relinquish their control to media experts, who are likely to order priorities and emphasis by reference to media rather than message considerations.

2. Amateurs and people who have never acted are often better than professionals in avoiding unrealistic over-slickness in a film or audiotape.

3. Familiarization of the actors and media people with the contents of the production and its target audience facilitates their performance. MSS found it effective, for example, to have actors visit and hang around the waiting area of a manpower agency, acting like applicants so that they could engage in conversation with real applicants, and observe the work there, as a way of inducing them into their roles. It is also useful to have them listen to recordings of real manpower agency interactions to provide a reality standard for them. The more closely based the media examples are to these recordings, the more realistic the media examples are likely to be.

4. MSS has found it effective, so far as realism is concerned, to rehearse actors thoroughly to the point where they can perform a scene with a mixture of ad lib and script, before actually recording or filming the scene. Once the scene has been so thoroughly rehearsed that the actors can build the script into their own characterizations, the actual recording can go rapidly and without need for frequent breaks and retakes.

5. Field testing serves no useful purpose if the media-based content of the training materials is already frozen. Printed materials can be revised relatively inexpensively, but revisions of audiotapes and film



are prohibitively expensive. We therefore recommend that for field test purposes, home-made versions of the audiotapes, and home-made videotapes of what is eventually to be included in a film be used, so that revisions can be made before the training materials are locked into a final (and expensive) version.

D. User Participation in Media and Methods

Users played several different roles in the process of translating practice principles into communicable and usable forms:

1. Authenticity Screen

Field representatives participated by screen-testing candidates for roles in the GLT film, who they evaluated on the basis of the extent to which they seemed like manpower agency staff and applicants. A related form of participation was through submitting tape recordings of interviews with applicants in which some of the practice principles in the use of simulation and imitation were illustrated.*

2. Pilot-Testers

A first form of the training materials for GLT was tested by giving

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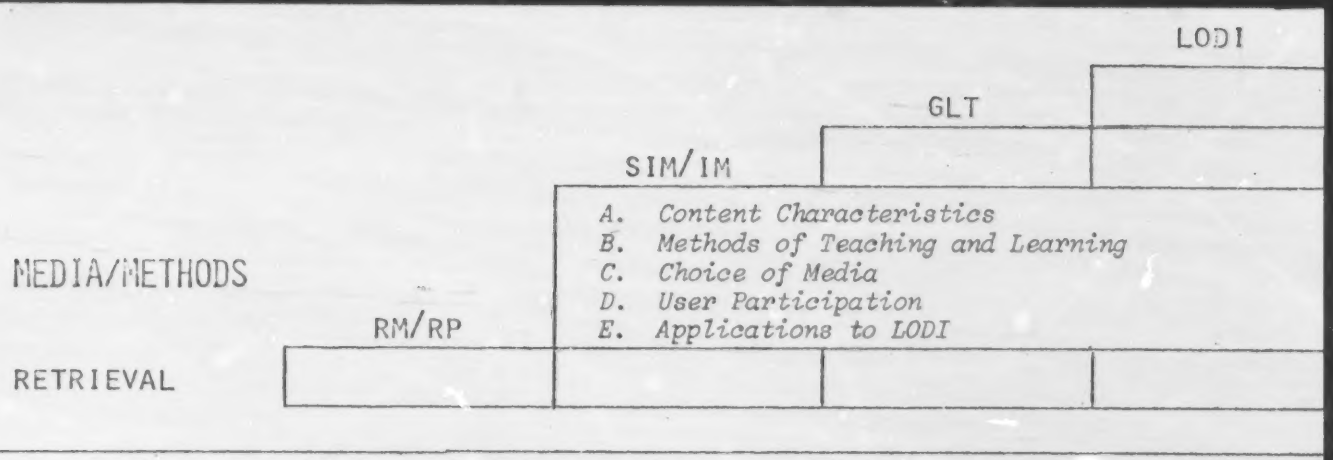
* The original intention was to use these recordings directly as illustrative material in the Sim/Im Audiotapes. However, field testing of the tapes indicated that the sound quality of live recordings was too poor for mass use. Another problem in the use of live recordings was that the techniques used by interviewers were often so bad that only a small proportion of the examples could be used. And in those recordings where the techniques were good, there was often so much content not relevant to the teaching point being illustrated that the listener was distracted from the teaching point. Therefore, the live examples were used as a basis for scripting "tighter" vignettes, which were then studio-recorded by actors. In effect, coming too close to reality interferes as much with instructional objectives as staying too far from it.



an on-site seminar in a manpower agency, in which the participants played two roles: they were learners of the materials' contents; and they were critics of the materials. Their judgements were used for initial assessments of the trialability, compatability, costs, benefits, and novelty of the materials. Based on their judgements, the materials were revised for a larger field testing.

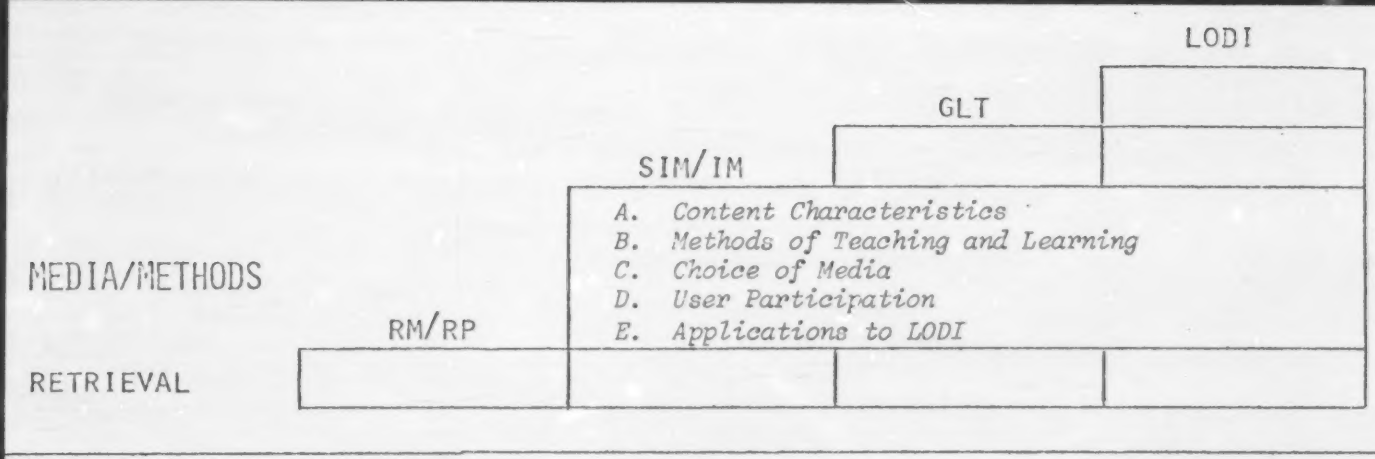
3. Field-Testers

Revised materials were given a more stringent test through actual use in a number of agencies, without on-site participation by MSS. Two methods of feedback were used: formal and extensive questionnairing and interviewing, in which the extent to which the materials satisfied the conditions described in this section of the report was measured, qualitative evaluation of the materials was assessed, and information on utilization and organizational factors affecting utilization was gathered; the second method was through conferences with MSS staff and field test participants, in which they suggested specific revisions in the materials, and served as editors and revisers.

E. Applications to LODI

The principles described above regarding the contents, methods of teaching and learning, and media selection and user participation are being directly generalized to LODI:

1. Trialability will be implemented by segmenting the contents into units which can stand alone, so that a user agency may elect to try out only some of the materials and/or only some of the techniques taught. Practice exercises will be selected in such a way that they provide significant learnings without running major risks to the users. For example, when participants try out a needs assessment in the local office, it will be suggested that it be done on a small scale, and with reference to possible needs which do not generate tension or disruptive forces (e.g., assess needs regarding speed and effectiveness of intake, rather than such "hot"

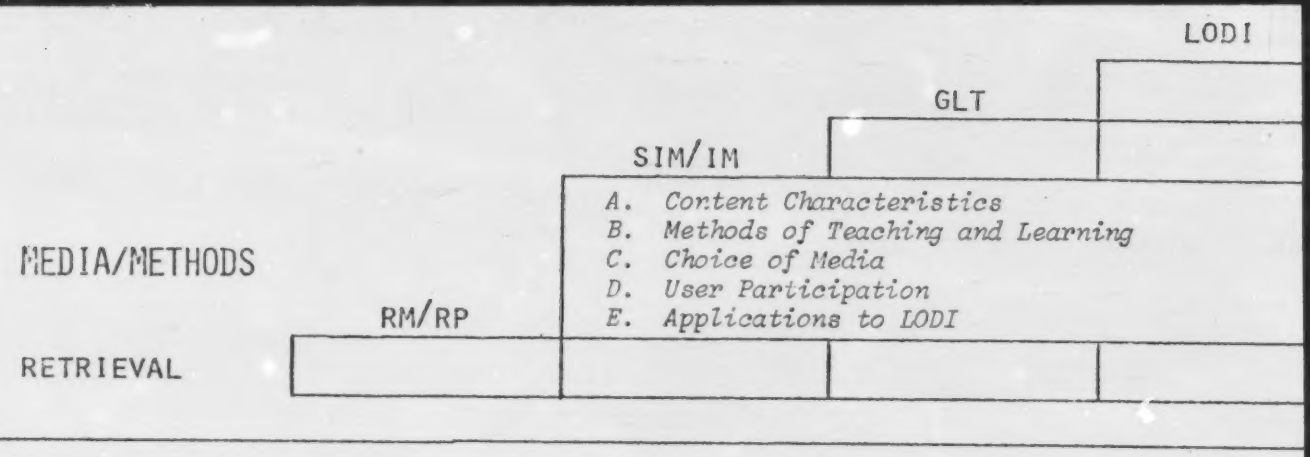


items as staff morale). Another type of flexibility is being built into LODI by designing the training process in such a way as to make it adaptable to the differing circumstances of small, medium, and large local offices.

2. Compatability will be achieved by using as recurrent examples throughout the materials illustrations of innovations which local offices have introduced, and the methods they used to solve problems. These illustrations are drawn from case studies obtained in extensive field interviews prior to the construction of a first draft of the materials, in which local office managers, supervisors, and line workers were asked to describe locally-initiated changes which took place in the office during the three years prior to the interview. Respondents were also asked to describe what aspects of their offices' operations they would change, and how they would change them, if they had the opportunity to redesign their agencies. Responses to these questions are being used to select illustrations of needs for innovation and problem-solving which are common to manpower agencies. Compatability is also represented by the content-free nature of the practice exercises. That is, when the training group is given practice in assessing local office needs, the specific needs which emerge from their use of needs assessment procedures are not prescribed. Thus the specific contents come directly from the realities of the local office in which the training takes place, guaranteeing the relevance and compatability of the innovations the participants then develop to meet those needs.

3. Costs of the training will be kept low by locating the training within local offices, and keeping each training session under two hours. A large part of the learning will take place through individual practice assignments to participants, which they may implement individually as they have the time between group meetings. These practice assignments will be designed so that they do not require permissions or clearances from administrators above the local office level.

4. Benefits of the training are being built into the training design: when all the participants have completed the practice assignments, they will find that they have carried out a complete process of producing and evaluating an innovation in the office's operation in response to a legitimate need. Thus the agency should benefit by a successful problem-solution which increases agency effectiveness, as measured by the evaluations conducted by

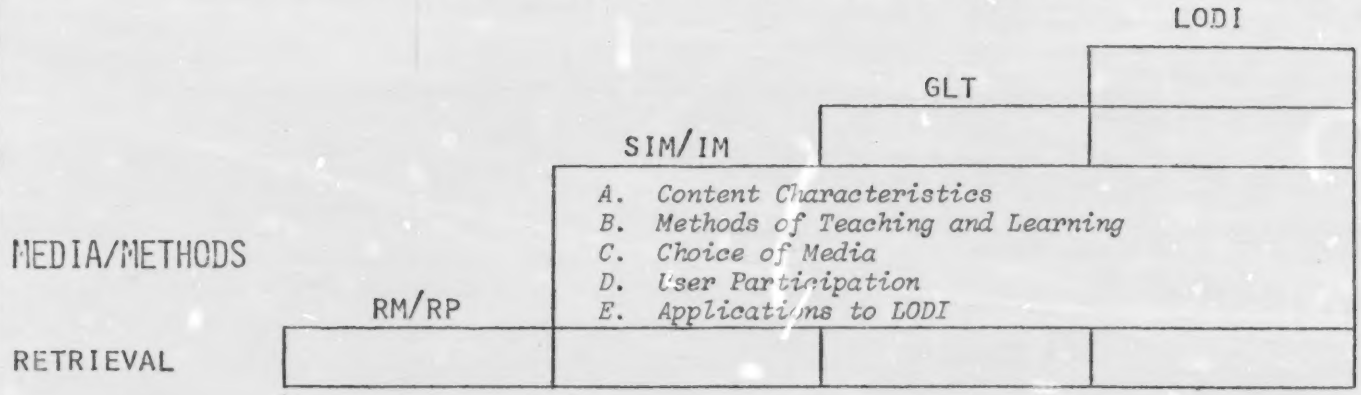


the participants in the training. Individual participants should also experience the benefits of increased professional competence. A recurrent theme in MSS' field interviews was that prior to decentralization and MRS, so much of a local office's program was prescribed by higher administrative levels that "we've forgotten how to be creative," as one manager put it. Thus an increase in the sense of competence in making professional-managerial judgements should occur among those who participate in LODI.

As in other MSS products, the LODI materials are based on and will reflect extensive reviews of the research literature to insure the validity of the LODI contents.

5. MSS is striving for a middle range of novelty in the materials. While local offices have not used the kinds of procedures required to implement the LODI model of problem-solving, many will be familiar with the elements of these procedures. For example, the needs assessment segment uses procedures similar to those involved in the Department of Labor's Self-Assessment Program.

6. Cognitive, observational, and experiential learning, behavioral shaping and feedback in a group context, and shared problem-solving are included in the LODI package. The materials will include samples or models for direct use by participants (e.g., files of questionnaire items for needs assessment questionnaires and for evaluation instruments). However, because the actual performance skills in LODI have fewer unique visual components, it is anticipated that there will be less use of film media than in GLT, and more print. Another departure from GLT is in the use of practice exercises; in GLT, these exercises were on a simulation basis (i.e., GLT group members used the techniques within their own Workshop group, but were not required to lead actual staff or applicant groups). However, in LODI, participants will obtain practice by actual performance of assignments in the local office (i.e., constructing, administering, and interpreting the results of a needs assessment procedure; developing alternative problem solutions and actually implementing a solution in the office, and then evaluating its effectiveness in solving the problem). Thus the experiential component of the learning will be increased and made more directly relevant. The learning group will function as a seminar to integrate the practice experiences of its members, to coordinate activities, and to develop consensus on the outcomes of each step in the LODI process.



7. Reflexivity is the dominant principle in LODI. A somewhat unexpected outcome of the application of this principle in GLT was that use of the group context as a method for teaching group leadership had the side benefit of increasing staff cohesiveness and professionalism (in the sense that there was an increase in the extent to which staff members attended to, thought about, and communicated with each other about the techniques they used in their work). In effect, the group format effected a change in the structure of communication processes within the agency.

This principle is being extended in LODI: the use of cross-hierarchy participation in a staff problem-solving group (i.e., in the LODI training group) automatically introduces into the agency some of the structural characteristics which research has found to be associated with greater organizational innovativeness. Although these features will be discussed in more detail later in section IV of this report, they can be illustrated here. One recurrent freature of organizations high in innovativeness is the high frequency of use of staff task forces in which the members are drawn from different divisions or job classifications within the organization. Requiring that the participants in each LODI group represent several different job titles (i.e., interviewers, employer relations representatives, etc.) will automatically create the kind of structure which is conducive to the objectives of LODI - increasing the capacity of the local office to adopt innovations.

Seen in this light, the structure of LODI training may play a more significant role in achieving the objectives of the project than the actual techniques and skills taught within that structure. In effect, a local office should emerge from its participation in LODI with a modified informal organizational structure appropriate to innovativeness, and which has already been used to introduce an innovation in the agency. This feature of LODI resolves a problem that was found in GLT. It is possible for an agency to participate in the GLT Workshop training, without actually following up by establishing a group program for applicants, so that actual utilization of the training in practice is a likely but not necessary consequence of the training. However, in LODI, any agency which participates in the LODI training will by that fact have introduced a more innovative informal structure, and will also have carried out the innovation adoption process at least once, thus increasing the probability that it will continue to do so in the future.

MEDIA/METHODS	RM/RP	SIM/IM *A. Content Characteristics* *B. Methods of Teaching and Learning* *C. Choice of Media* *D. User Participation* *E Applications to LODI*	GLT	LODI
RETRIEVAL				

8. In addition to user participation through pilot and field testing, inputs from users will include the examples and illustrations obtained by MSS' interviews in local offices prior to the development of the first draft. Later editions will also include as examples the innovations tried out and adopted as practice exercise by the participants in the pilot and field testing.

DIFFUSION			LODI	
			GLT	
			A. *System Features*	
		SIM/IM		
MEDIA/METHODS	RM/RP			
RETRIEVAL				

III. DISSEMINATION AND DIFFUSION STRATEGIES

The objective of designing parachutable training materials in the ways described in the previous section is to increase the probability that users of the materials will convert the knowledge contained in the package into performance on their jobs in manpower agencies. In order for this to happen, the materials themselves must be disseminated and used; that is, diffusion of the "message" precedes use of the message.

There has been relatively little research on the diffusion of innovations within complex organizations. For example, of the more than 2,200 research studies on innovation diffusion, only about 370 are concerned with organizations as innovation adopters, and almost all of those studies concentrate on the characteristics of high vs. low innovative organizations. There are almost none that deal with the process of innovating within organizations. Thus MSS' work in this area finds very little guidance from existing research.

Further, when one examines the organizational structure of the manpower system and compares it with the characteristics of highly innovative organizations, one comes to the conclusion that the manpower system lacks many of the structural characteristics which have been found to facilitate innovation. Some of these characteristics will be discussed in Section V of this report. In this section, we will deal with those characteristics which influence the spread of information about a potential innovation within the manpower system.

A. Relevant features of the Manpower System

1. Official Communication System

There are gatekeepers at each of several levels of the manpower system: federal, regional, state, and local office. It is very difficult for an organization outside the official manpower system, as is MSS, to enter a message into the official communication system. In order to make all local offices aware of the message concerning a potential innovation, some communication must be entered into the formal communication channel at the top

(i.e., at the federal level). But as the communication passes down from level to level, each can turn off the faucet and stop the flow to lower levels. Thus, a regional office can decide not to support the innovation for units within its jurisdiction, and a local office manager can elect to not inform his staff about a communication he has received. There is relatively little upward flow of communication from operating units about their needs for innovations in techniques of service. Even if there were opportunities for such upward communication, most people find it hard to recognize their needs in the absence of some information about the availability of something that will meet the need. That is, the typical experience is not that one becomes aware of a need and then searches for something to meet it; rather, people tend to become aware of their needs, or to recognize them, only at the point when they become aware of the availability of some new way of doing things, at which point they recognize it as useful to them.

A great gap in information transfer exists between local office managers and their staffs. Few local office managers conduct full staff meetings, and even when they do, information about the availability of innovations is seldom passed down.

Gatekeepers in the official communication channel do not have the same needs as the line workers who are the targets of the process of diffusing innovations in the techniques of service. A line worker who assigns high priority to doing his or her job better would concentrate on techniques of service; an administrator higher in the hierarchy who assigned high priority to doing his or her job better would be relatively less attentive to techniques of service to clients and more attentive to innovations that have to do with administration and management. Thus one feature of the manpower system is that often the decision-makers are not the actual users of innovations in service techniques, and there are important differences between what the decision-makers and the potential users consider important or useful to them. And as pointed out earlier, the decision-makers have much more control over the communication channels than the potential users of the innovation (i.e., than the line workers).

This feature of the manpower system is made even more problematic by the fact that administrators and managers often are drawn from a different pool of expertise than are line workers who are targets of information about

new techniques of service in working directly with applicants. Managers and those higher in the system are much less likely than staff to have studied counseling, the social or behavioral sciences, or related academic or professional areas; they are more likely to have come from backgrounds in business, sales, management, and administration. There are thus differences in interests, expertise, language domains, and values associated with differences in priorities and in decision-making control.

2. Alternative Communication Systems

There are few viable alternatives to the official communication channels. There are no journals which are read in common by most target users, except perhaps for Manpower, and we have found that even this journal often does not circulate to line workers from local office managers. Further, getting a communication into Manpower is not a rapid process, and many months are consumed between writing a first draft of an article for Manpower and the ultimate distribution of that article to the readership.

Outside of Manpower, few other channels exist. Very few in the manpower system subscribe to the Journal of Employment Counseling, and there are no professional associations in which a large number of line workers participate by attending conferences, conventions, and meetings. The IAPES News does not carry information about techniques of service. Face-to-face communication among line workers from different offices within a state is severely limited in frequency, and is almost non-existent across state lines. In short, there are almost no useful formal communication channels which reach potential users, and which are open to inputs from outside innovation sources such as MSS. As a result, the word does not spread from one satisfied user to another.

3. Multi-Level Adoption Decisions

Acceptance of a communication about a potential innovation must occur at all levels in the system, if the innovation is to be adopted. An authority decision from the top of the hierarchy can be subverted by those at the bottom, but a decision to adopt cannot be made by those at the bottom because they have no access to the mechanisms for purchasing and supplying the materials. One State agency agreed to try out the Sim/Im materials in the training

DIFFUSION				LODI
			GLT	
			A. *System Features*	
		SIM/IM		
MEDIA/METHODS	RM/RP			
RETRIEVAL				

of new staff; sets of tapes were issued to the trainees who were then instructed to use the tapes as they had time during the practicum portion of their orientation, when they were assigned to local offices. It turned out that local office managers would not allow the trainees to listen to the tapes during office hours, nor would they allow them to borrow tape playback machines over night to listen to them at home, on the grounds that state property cannot be loaned out. These trainees were also prevented from writing in the Workbooks which accompany the tapes, because such use would consume the Workbooks. In another instance, NYC staff members wanted to participate in Group Leadership Techniques Workshops and the Regional Office was enthusiastic about supplying the Workshop materials - but the local NYC managers blocked use in their offices. It is thus important to obtain acceptance of the materials at all levels of the hierarchy, from the potential user up. The problem is to find a way of presenting information about the materials that will appeal to the very different interests and needs of those at each of these gate-keeping levels; without such an appeal, there can be no communication to all the levels, and no acceptance.

4. Sponsorship

There is a reservoir of suspicion among manpower agency staffs about private companies that sponsor innovations. Even though non-profit, MSS found that its presentations regarding its products were received with the suspicion that MSS has something to gain financially from acceptance of its products; assertions that its products are free to components of the manpower system, or at reproduction cost, appeared only to highten that suspicion. We have, therefore, found it more effective for endorsements to come from Labor Department personnel, and to avoid having MSS seen as attempting to "sell" utilization of its products.

Related to this suspiciousness is the perception by many within the manpower system that outsiders do not understand the system sufficiently well to be relevant to it. Thus one feature of the manpower system which affects communication is a set of attitude barriers to penetration by organizations external to the system.

				LODI
			GLT	
DIFFUSION		SIM/IM	*A. System Features* *B. Diffusion Strategies*	
MEDIA/METHODS	RM/RP			
RETRIEVAL				

B. Diffusion Strategies

A number of methods for entering messages into the manpower communication system have been explored. In almost all cases, these methods have relied on informal channels as a means of ultimate penetration of formal and official channels.

1. Word-of-mouth

One function of encouraging potential user participation in the retrieval and media implementation phases was the stimulation of word-of-mouth endorsements of MSS products by those line staff members who worked with MSS. In one project (Sim/Im), these participants were paid by MSS for their time outside normal working hours in their home agencies, but as indicated earlier in this report, this did not work. Participants seemed to feel that being paid by MSS made them self-interested agents of MSS, and they were therefore embarrassed to talk about MSS and its products among their colleagues. Thus payment inhibited their word-of-mouth endorsements. In a later project (GLT), participation was unpaid and voluntary, but sanctioned by their home agencies. However, that did not help much; though these participants did develop a strong commitment to the project and its products, their opportunities to communicate to others outside their own local offices were so limited that very little word-of-mouth communication could take place. And when it did, there were no mechanisms for line workers in nearby offices to translate what they heard about the MSS materials into a communication up the formal hierarchy to decision-makers who could arrange to make the materials available to them.

Word-of-mouth has been more effective with users outside the manpower system; a large number of students in the School of Social Work of the University of Michigan, where the Group Leadership Techniques Workshop has been given as a course, later stimulated requests for the materials by the social agencies in which they found jobs.

2. Reputation and Personal Contacts

One of the most effective methods for getting access to formal official communication channels in the manpower system is to have officials observe use of MSS' products. But in order for them to have sites to visit, there

DIFFUSION			GLT	
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must be some other, less official way of getting some sites to use the materials. Informal contacts with State and local office administrators, sometimes arranged through the endorsement of regional office officials, have been instrumental in getting sites for such try-outs of the materials. The personal contacts of MSS staff, and their reputation among regional, state, and local administrators did much to grease the ways to this kind of informal entry to the system.

3. Field Testing and Site Visits

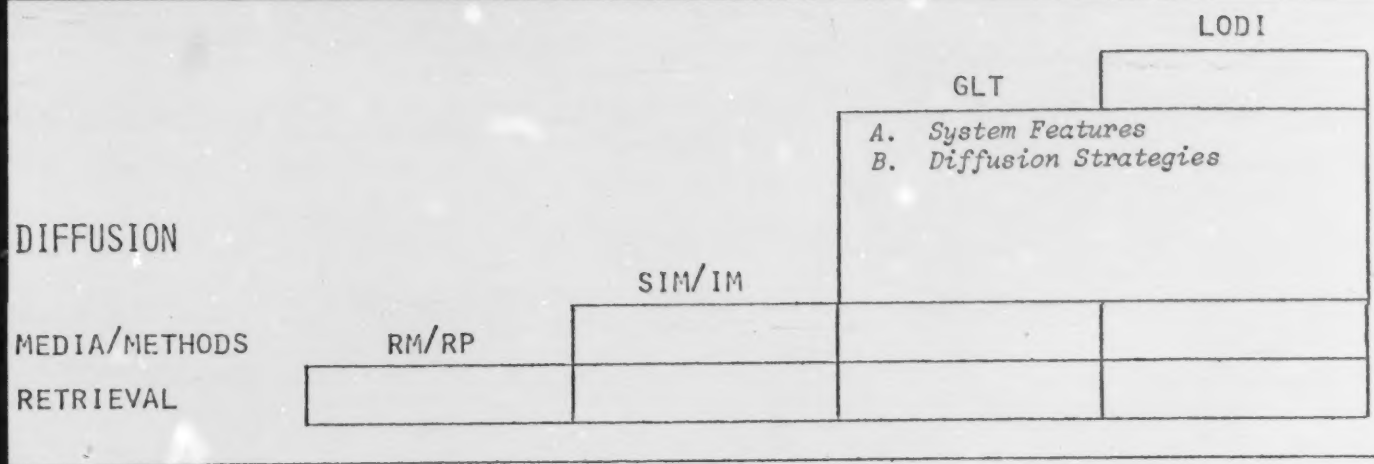
Once this informal entry has been made, personal contact and reputation among federal level officials are instrumental in getting information about the try-outs to those officials. If these officials (or their representatives) visit the field test and try-out sites, the line staff who are participating in the project then have an opportunity, not available in any other way, to communicate their endorsements by word-of-mouth directly to those who can make the decision to disseminate the product or information about it through the formal communication system. It is thus vitally important to get federal officials involved in try-outs, and in direct contact with participants who are inside the manpower system.

In MSS' experience, federal level interest and endorsement is an important back-up to regional officials; without it regional officials are less likely to follow through on their own in disseminating and endorsing products to the States.

4. Conferences and "Taste-Testing"

Face-to-face contact with decision-makers and potential users is the dominating theme of the methods cited above. Such contact also takes place at conferences of professional associations (e.g., APGA) and of manpower system components (e.g., regional conferences of Job Corps Center staffs). The agendas for the latter type are controlled by federal officials, so it is necessary for MSS to have established support at the federal level to be put on the agenda.

Speeches about MSS' products at such conferences come too close to advertising commercials to be effective; the audiences take such speeches



with much salt, and the suspicions described earlier. However, if the conference planners can be prevailed upon to provide enough time for the audience to participate in a sample of the use of the MSS product under consideration (e.g., part of one session of the Group Leadership Techniques Workshop), response is much more favorable.

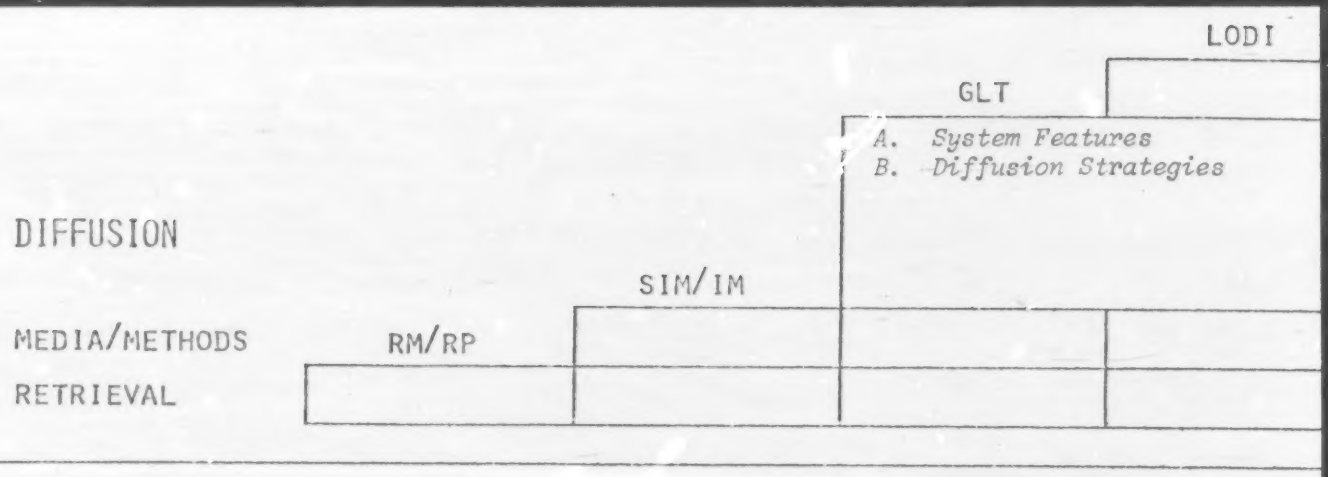
There are, then, three major difficulties in the use of conferences for diffusion: getting on the agenda (and indeed, knowing about planned conferences, so that a request can be made to the organizers to participate), getting enough time for the audience to "taste-test" the product, and being allowed by the conference organizers to use the time that way, rather than adhering to an inappropriate format.

5. Newsletter

Originally begun as a means of sharing experiences, information, and problem-solutions among those field-testing the Group Leadership Techniques Workshop, the MSS Newsletter had as its primary goal enhancing the commitment, interest, and cohesiveness of participants. Once the field testing was concluded, the Newsletter shifted its goals toward stimulating interest in MSS and its products. This was done indirectly by carrying research-based information about a range of services to manpower clients, and directly by carrying articles about MSS' products for improving these services.

The Newsletter is sent bi-monthly to any individual or organization that has had anything to do with MSS or its products. There are about 450 recipients at this time. In effect, the Newsletter serves as an alternate to the official formal communication system, with an emphasis on potential users (rather than decision-makers). However, the Newsletter has also had an impact at the federal level, with some of its articles being reprinted and disseminated through formal Department of Labor channels, and/or cited to others by federal officials.

The main function of the Newsletter at this time is to increase the receptivity of line staff to MSS products, so that they will be positively motivated to implement and use those products, once central decision-makers have made them available at the local level. Accordingly, its mailing list is now being expanded by the additions of potential users from specialized



manpower programs (e.g., Job Corps Centers, pre-trial intervention projects) and by carrying information about uses of MSS products in various agencies (i.e., endorsements).

In developing the Newsletter as a carrier of social science knowledge relevant to manpower agencies, MSS has learned some useful things about writing to practitioners about research findings:

a. One study is not enough to write about, if one wishes to avoid peppering people with bits and pieces of isolated knowledge. In order to say anything of useful scope, a number of research studies must be brought to bear on the topic. For example, one article cited 20 studies, bearing on ways of preparing applicants for counseling to increase the effectiveness of the counseling.

b. The primary focus is on actions which implement the research. Sentences should have manpower agency staff and/or applicants in the subject position, rather than the typically academic "Smith and Jones found that...."

c. Outline and describe the actions indicated by the research evidence first, then explain the theory or logic for the effectiveness of the action, and save an accounting of the research evidence and its methodology for last. This order is an almost exact reversal of the order of presentation used in scholarly journals.

d. Use brief headings frequently, and orient the headings to the user. Example: "Pre-Counseling Preparation Increases the Effectiveness of Counseling" is better than "New Research on Applicant Expectancies Regarding Counseling."

e. Give greatest prominence to research in manpower agency settings, less to research in related or similar settings, and least to research on psychiatric patients or on therapeutic counseling.

f. Take an enormous amount of time to write draft after draft, progressively more simplified and brief. G. B. Shaw once apologized for writing a lengthy letter on the grounds that he didn't have enough time

DIFFUSION		SIM/IM	GLT	LODI
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to write it more briefly. It took one MSS staff member almost two weeks to boil down a year long review of the research literature into five typewritten pages summarizing almost 50 major research reports. The result looks simple and easy, apparently belying the great amount of effort that went into the process of reviewing the research, conceptualizing, and writing, but that was the goal.

C. Factors Affecting Diffusion

1. Visibility

Research on innovation diffusion indicates that the visibility of an innovation is an important influence on adoption. The more that the innovation can be seen, touched, and manipulated, the easier it is to communicate about and make an adoption decision. However, when the innovation is a process rather than a product, visibility is low. Group work in manpower agencies is a process rather than a thing; the Group Leadership Techniques Workshop is primarily a training procedure and one which is difficult to observe, as its most important elements are the psychological events which occur among participants. The result is that potential users want to look at something and, as the most visible aspect of the product is the film component of the Workshop materials, the film is focussed on as if it were the major aspect of the project although it plays only a minor role in the instructional process. The film therefore carries the major weight of initial evaluation by potential users, who ascribe to the whole product the judgements they make of the film. Accordingly, the most readily visible or material components of an innovation package should be designed so as to communicate qualities of the innovation which would otherwise only become apparent to those who have participated in the process. If this cannot be done, then "taste-testing" as described earlier becomes even more important, to reduce over-dependence on the visible aspects of the product as a true representation of the total product.

2. Evidence of Effectiveness of the Innovation

Potential users, and especially federal and State decision-makers, frequently request evidence for the validity of the innovation under ques-

				LODI
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DIFFUSION		SIM/IM	*A. System Features* *B. Diffusion Strategies* *C. Diffusion Factors* *D. Tracking and Recording*	
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RETRIEVAL				

tion, provided that the validity was established within the manpower system (which they tend to see as so different from other systems that evidence generalized from other systems is rejected as irrelevant). The problem is that before validity in the manpower system can be established, the innovation must be adopted within the system so that it can be tested. And then, the validation research must be reported in a way that makes sense to non-social-scientists.

Getting agreement to pilot test the materials is the closest we have been able to come to obtaining use of MSS materials for validation; although the sample of pilot-testing agencies is therefore necessarily small, some data on the effectiveness and relevance of the training materials was obtained.

The trick is to present evidence which will speak to the differing interests and objectives of gate-keepers and potential users at all the hierarchical levels. This requires a careful selection of the evidence to be presented, and the use of methods which will summarize and compress the evidence into easily communicable forms (e.g., bar graphs with single line statements of conclusions based on the data). The data collected in the Group Leadership Techniques Workshop field testing, based on extensive questionnaires, session by session ratings, and follow-up interviews, were reduced to five attractively-designed graphs presented on three pages of a seven page Administrator's Guide.

D. Tracking and Record-Keeping

One of MSS' responsibilities is to produce knowledge about retrieval, diffusion, and utilization of social science knowledge in the manpower system. In order to do that, MSS has developed a system for tracking on all contacts between MSS and potential diffusion agents and potential users. The system is based on a relatively simple form which is generated each time any MSS staff member communicates in any way with a potential user or diffusion agent regarding any of MSS' products. Taken together, these forms and the information they contain comprise a large sample of case studies of the process of diffusion and user response. As far as is known,

DIFFUSION				LODI
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			A. System Features *B. Diffusion Strategies* *C. Diffusion Factors* *D. Tracking and Recording* *E. User Participation* *F. Applications to LODI*	
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RETRIEVAL				

this file is the most complete data source of its kind, and will be an invaluable resource for analysis when the utilization process has been completed.

A further method for studying the diffusion process has been built into the Group Leadership Techniques Workshop materials. Each Handbook in a set of materials is uniquely numbered, and that number recorded when the Handbooks are distributed to potential users. Reorder cards and a questionnaire contained in the Handbook, to be filled out by the user before the Workshop is begun, carry the same number as the Handbook. Thus the system can track on the career of MSS materials through the manpower system to the ultimate user. When combined with follow-up data on factors affecting use of the materials and adoption of group work as an innovation, these data may yield a comprehensive picture of diffusion networks which operate at both formal and informal levels in the manpower system.

E. User Participation and Roles

The major role of users in the dissemination phase is that of demonstrators of the materials, and endorsers of them to federal, regional, and state officials who visit the field test sites and observe the process. As indicated above, users are seldom effective as dissemination agents through word-of-mouth to other potential users. However, their endorsements, when communicated to decision-makers and to line staff in other agencies through site visits and the MSS Newsletter, are important components of a diffusion strategy.

F. Applications to LODI

1. Federal and regional officials in areas and programs to which the LODI materials will be relevant are being involved in the project early, in order to facilitate entrance of information about the LODI materials into the official communication channels. This is being done through coordination of the LODI pilot testing with other programs being officially pilot-

DIFFUSION		SIM/IM	GLT	LODI
			A. System Features *B. Diffusion Strategies* *C. Diffusion Factors* *D. Tracking and Recording* *E. User Participation* *F. Applications to LODI*	
MEDIA/METHODS	RM/RP			
RETRIEVAL				

tested by USES officials,* through the use of project liaisons to MSS from operating divisions of USES, through feedback of needs assessment data collected in interviews with manpower agency staff and local office administrators to state and regional officials, and through the MSS Newsletter.

2. Arrangements will be made for federal officials to visit pilot and field test sites to observe the LODI process.

3. The system for tracking on contacts is being expanded and transferred to McBee Keysort cards, with pre-coding of many items to facilitate recording and analysis.

4. Highly visible components of the LODI materials (e.g., films) will not be cast into permanent form until after field testing; field test versions will be at the "home movie" level, in order to allow for modifications which will enable these components to serve as a representative sample of the complete LODI process.

5. Specific validity data will be collected from a sample of LODI users and compared with a group of non-using agencies, with USES officials participating in and arranging for the selection of the user and non-user samples. Major areas to be measured are:

   a. Extent to which innovations are introduced in local offices as a result of participation in LODI training.

   b. Extent to which the LODI model is institutionalized in participating local offices.

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* Arrangements are being made to field test LODI in conjunction with USES' pilot program to implement the Vickery report. If these negotiations are successful, LODI dissemination through formal channels may be assured as part and parcel of USES' diffusion of the program developed in its pilot projects. Thus LODI will piggy-back on to USES' policy decisions as a means of gaining access to the formal system. This arrangement is itself a product of informal contacts between MSS staff members and USES officials and officials of states in which the pilot projects are located.

DIFFUSION		SIM/IM	GLT	LODI
			A. System Features *B. Diffusion Strategies* *C. Diffusion Factors* *D. Tracking and Recording* *E. User Participation* *F. Applications to LODI*	
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c. Extent to which local office structural characteristics become more like those associated with more innovative organizations.

d. Increase in effectiveness in participating local offices, based on ESARS and Self-Assessment data.

ADOPTION / DIFFUSION / MEDIA/METHODS / RETRIEVAL	RM/RP	SIM/IM	GLT	LODI A. *Innovative Organizations*

IV. INCREASING THE ADOPTION CAPACITY OF MANPOWER AGENCIES

The last step in the social science knowledge utilization cycle is one in which the ability of local offices to respond effectively to communicated innovations is enhanced. This step is the focus of the LODI project currently under way.

A. Characteristics of Innovative Organizations

An extensive review by MSS of the research literature on innovations in organizations led to the identification of 42 characteristics which have been found to differentiate more from less innovative organizations. Of those 42 characteristics, at least 17 can be directly modified, another 16 may be modified, and the remainder are either unchangeable by any known procedure (e.g., "Organizational leaders are marked by ambitiousness and striving for higher status than they have achieved so far."), or are limits within which the manpower system must operate (e.g., given merit system requirements, there is not much that can be done about "Many staff members are active members of professional associations and societies.") Another group of characteristics consists of those related to methods of operation which probably cannot be influenced at the local office level (e.g., "There are relatively few written rules and standardized procedures.").

1. Modifiable Characteristics

Following are the 17 characteristics of innovative organizations that can be modified:*

1. Decision-making and authority are decentralized among the units and divisions within the agency.

2. There is a two-way flow of communication up and down the line. Staff members can rapidly and easily send messages up the hierarchy, and those at the top pass information and ideas down to the staff.

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* These characteristics refer to the local office as the unit of analysis.

ADOPTION				LODI
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MEDIA/METHODS		SIM/IM		
RETRIEVAL	RM/RP			

3. When information or ideas go up through the hierarchy, they will reach the top without distortion or disguise introduced by subordinates along the way.

4. At each level of the organization, there are people who belong to overlapping levels and have frequent contact with those at the level above them and the level below them.

5. The supervisors give feedback to subordinates on the outcomes of staff efforts rather than on the methods used to reach goals.

6. Problem-solving and decision-making is done in staff meetings, committees, and/or task forces in which everyone on the staff is expected to participate.

7. Regardless of job title or position classification, there are not large differences among staff in expertise, power, or influence.

8. Staff members are often members of overlapping groups in which members of one division or unit interact with members of other units or divisions.

9. There is rapid and informal direct communication between working units or divisions within the organization, through other than formal reporting channels.

10. Staff members of different units or division, and of different job titles and specializations, have a high frequency of formal and informal face-to-face interaction.

11. Work responsibilities are assigned to staff organized into task units, rather than divisions based on job title or professional specialization.

12. There are staff members whose tasks include liaison between units or division within the office.

13. Coordination is achieved through representative councils, committees, or task forces of peers, rather than through authority decisions.

ADOPTION				LODI
				A. *Innovative Organizations*
DIFFUSION			GLT	
MEDIA/METHODS		SIM/IM		
RETRIEVAL	RM/RP			

14. Staff members are permitted discretion in how they carry out their assignments and work tasks.

15. Staff members are generalists, carrying out many different tasks, rather than narrowly defined specialists.

16. Staff members consult with each other freely on problems in their work.

17. Staff members give each other feedback, approval and praise for their work and contributions.

Each of these characteristics can be built into the design of the LODI materials in such a way that the characteristic is automatically introduced into the local office when it uses the LODI training materials. For example, the LODI training group is prescribed to cut across the local office hierarchy and divisions so that the group consists of supervisors and line staff from different units within the office, thus automatically introducing characteristics 2, 4, 8, 9, 10, 11, and 13. The nature of the task assignments made to participants in the LODI training group, in which members carry out needs assessment, brainstorming, and other kinds of problem-solving activities, and in which the training group coordinates these activities and makes decisions about the products of the activities, introduces characteristics 1, 6, 12, 15, 16, and 17. The contents of what is learned about problem-solving and decision-making as a result of participation in LODI introduces 3, 5, 7, and 14. Thus participation in LODI will introduce a large number of characteristics associated with greater innovativeness in the local office.

2. Indirectly Modifiable Characteristics

In addition, another 16 of the 42 characteristics of innovative organizations may be affected by the LODI process, though less automatically than the 17 just cited:

1. The leadership of the organization takes an activist stance in lobbying for change with superiors and through support of change-oriented forces.

ADOPTION				LODI A. *Innovative Organizatio*
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RETRIEVAL				

2. Supervisors are oriented toward helping staff solve problems by giving information, advice, and suggestions rather than controlling staff behavior by giving instructions, decisions, and maintenance of existing agency rules and enforcement procedures.

3. There is a clear separation between the evaluation of staff members and the supervisor's role as a consultant to line staff.

4. Supervisors inplement rewards for new ideas and problem-solving by subordinates.

5. Supervisors support subordinates and advocate for them to those higher in the hierarchy.

6. There is little rivalry among units or divisions within the agency.

7. There are many opportunities for staff members to have contacts with external organizations or agencies.

8. There are staff members whose tasks include liaison with other organizations, offices, or agencies.

9. Tasks are often unpredictable and non-routine, requiring adoption of new methods and procedures to meet changing conditions.

10. There is no one orthodox point of view, theory, or methodology which is dominant or sanctioned. Differences among staff in orientation and interests are encouraged.

11. Staff members read a variety of journals related to their work, inside and outside their specialty.

12. Staff members have contacts with experts in other fields, and with other experts in their line of work outside the local office or area.

13. Staff members satisfy achievement needs through acquiring new ideas, technical knowledge, and professional growth.

14. Staff morale is high.

ADOPTION			GLT	LODI A. *Innovative Organizations*
DIFFUSION		SIM/IM		
MEDIA/METHODS	RM/RP			
RETRIEVAL				

15. The office operates joint projects with other agencies and organizations.

16. There is a great deal of communication between the organization and its community.

Many of these characteristics may be addressed through the kinds of projects which participants develop and implement in the course of the LODI training. For example, members of the training group may interview or visit other local offices in order to get ideas for ways to meet objectives that the group has decided to work on, thus fulfilling characteristic 7 and 12 above. They may search for problem-solution ideas in publications, implementing 11. The cooperative interchanges which occur in the LODI group may have the same effect as that observed in staff groups which participated in the Group Leadership Techniques Workshop - an increase in staff cohesiveness - thus implementing 6 and 14, and having the potential for modifying the relations between supervisors and subordinates in the directions suggested by 2, 3, and 5. Successful projects carried out in the course of LODI, in which an effective change which meets agreed-upon objectives is implemented, and its consequences for improved agency performance measured, may have an impact in the direction of 1, 4, and 13. Given that these projects are new to the agency and participants, they create the opportunity for implementing characteristics 9 and 10.

The current direction of policy regarding manpower agency management is in the direction of decentralization, responsiveness of local units to local needs (as in CMP and MRS proposals), individualization of services so as not to devote resources to services not needed by applicants (as in COMO), and greater responsiveness to the wishes and needs of local employers (implementation of the Vickery Report). In order to coordinate LODI with other policy developments in the manpower system, it is anticipated that many of the examples and suggested projects for LODI participants will be in these areas. If this kind of coordination can be achieved, the result will be implementation of 8, 15, and 16 above.

In effect, then, LODI is being designed and conducted in a manner intended to increase local office receptivity to innovations in the delivery of manpower services by introducing into the local office most of those characteristics which are correlated with greater innovativeness.

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RETRIEVAL				

B. LODI Contents

As indicated earlier in this report, LODI training will take place in cross-hierarchy and cross-divisional staff groups, with some modifications to accomodate local offices of varying sizes (e.g., for small offices, members may be drawn from more than one local office in the area). The group, of 8 to 12 staff members, will meet periodically. In the meeting, they will read and discuss one section of text from a guidebook, apply the principles contained therein to their office, engage in exercises to give them practice in carrying out the function described in the text, and make assignments for actual implementation of the function in the office prior to the next meeting. The next meeting of the group will begin with the results of the implementation, and carry the process forward to the next function, again reading in a guidebook, discussing, practicing, and making plans to implement. The process will be facilitated by one or more group members assigned the role of convenor or co-convenors of the group, who will work from a convenor's manual.

The major functions to be covered are the following:

1. Determining needs in the local office.
2. Selecting and specifying objectives in relation to needs.
3. Surveying alternative methods for achieving objectives.
4. Assessing staff time and skills required by each alternative method.
5. Assessing resources required by each alternative method.
6. Analyzing structural and practical constraints on the alternatives.
7. Analyzing the costs and potential payoffs of the alternatives.
8. Selecting from among the alternatives.
9. Implementing a try-out of the alternative.
10. Evaluating the try-out in relation to the objective.
11. Reassessing the project.

In each of the above functions, methods for carrying out the function will be taught by the LODI materials, with latitude given the group regarding choice from among sets of possible methods.

Throughout the materials, illustrations of the principles will be provided. For the first draft, these illustrations will be drawn from the

ADOPTION			LODI	
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			GLT	B. *LODI Contents*
DIFFUSION		SIM/IM		
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RETRIEVAL				

pool of innovations actually introduced in the 40 local offices which were surveyed by MSS in the course of its needs assessment interviews. Further illustrations will be added, based on the projects undertaken by LODI training groups participating in the pilot and field testing of the materials. Selection from among these innovations will be made partly on the basis of consistency of the innovation with emerging priorities in the manpower system (i.e., placement objectives, employer services, and differential provision of services depending on applicant need, as in COMO).

An additional basis for selection of examples will be feasibility: it is important that practice examples and the group implementation projects involve innovations which are small enough to not run afoul of external constraints, simple enough so that they can be accomplished without a great many prior clearances, and yet significant enough that participants and the office will experience success through accomplishment of the innovation.

The MSS Newsletter may be used as a supplementary source of illustrative innovations, similarly drawn from actual manpower agency experience, and constituting a file of ideas which may be used by LODI participants and other program planners in the manpower system.

The effectiveness and quality of the LODI materials will be evaluated throughout the pilot and field testing phases. Final evaluation, as described earlier, will be based on effectiveness in facilitating innovations in LODI-using offices, institutionalization of the LODI process, structural and functional changes associated with innovativeness characteristics such as those listed above and increased local office effectiveness in placement, employer services, and delivery of services to applicants.

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MEDIA/METHODS	RM/RP			
RETRIEVAL				

V. ORGANIZATIONAL STRUCTURE FOR RETRIEVAL, DIFFUSION AND UTILIZATION

The kind of work described in this report cannot be carried out in every kind of organizational structure. If this pattern of development of social science based innovations were to be institutionalized in the manpower system, consideration would have to be given to the way in which a staff is organized to do the job, and the kinds of linkages which would need to be established between that staff and other components of the manpower system. The purpose of this section is to suggest some guidelines regarding such structural considerations.

1. If the scientific validity of the knowledge to be used is to be preserved, the retrieval staff must be interdisciplinary in composition, and ecumenical in its orientation to theories and research in the social sciences. Centrifugal forces are often generated in mixed staffs; while there is no single way to prevent such forces from having dangerous consequences, it helps a great deal if the staff members are sufficiently interdependent to keep them working together and motivated to overcome doctrinal differences.

2. There is a tension between respect for research evidence and the practical needs to finish a product. Depending on the context, this tension is sometimes resolved in favor of an overly-pedantic immersion in the minutiae of the research literature which goes beyond the level of precision needed for utilization; sometimes it is resolved in the other direction, through an over-reliance on current doctrinal fashion and "common sense" which then limits openness to new insights which might emerge from attention to the scientific literature. Again, there is no single way to keep the right balance, but it helps if the staff fairly well balances its commitments to academic social science, in order to preserve respect for data, and its commitments to the practical world in which the knowledge is to be used, in order to preserve respect for the characteristics and needs of that world. Joint appointments of staff members to the R-D-U organization and to a university is one mechanism for preserving this kind of balance.

3. Given a heterogeneous staff with multiple commitments, efforts to achieve integration are subverted if forces on one side or another have a greater share of power, authority, or influence in the organization, beyond that which is provided by their command of logic and knowledge. In other

				LODI
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words, any correlation between formal power and a particular kind of social science expertise or a particular kind of intellectual or practical commitment, is likely to inhibit the free interplay of the various viewpoints. Thus an R-D-U organization should have a relatively flat hierarchy, and shared decision-making with an emphasis on consensus, in order to prevent any particular specialty from riding roughshod over others in power plays. All products must then be commonly "owned" by the staff, to preserve the interdependence.

4. Close working relationships with potential users are essential; these relationships would be impossible if there were differences in formal authority and organizational power between the R-D-U staff and the line worker participants. Further, it is seductively easy for R-D-U workers to minimize contact with potential users on the assumption that the R-D-U staff know, understand, or can predict line workers' responses so well that it would be a waste of time (and dangerous to the ego) to bother with joint participation. This is the most common mistake made by central program-planning staffs; when such organizations do include potential users, they tend to gravitate toward a selected few with whom they have already established stable working relationships, and who tend to agree with the central planners in their outlook (and who often approach the collaboration as a way to get promoted out of the field). This kind of mutual seduction is hard to prevent, but it can be minimized under certain circumstances. When the R-D-U organization is dependent on the potential users for its success, and has no other reliable basis for legitimation and authority, it is less likely to ignore the potential users. This suggests that the R-D-U organization should not have formal authority in or over the user system, although it does need to have some access to communication channels in the user system.*

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* Innovations can occur through authority decisions in many areas of operations (although implementation of authority decisions can be subverted by line staff, even if the authority decision is buttressed by appropriate training and supportive structural changes). But the emphasis in this report is on innovations which cannot be enforced by an authority, because they fall within discretionary areas of work which are almost impossible to monitor and control.

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MEDIA/METHODS	RM/RP			
RETRIEVAL				

5. Finally, an R-D-U organization needs the time and scheduling flexibility to make use of frequent and extended meetings of its staff, so that communications from all the perspectives represented may be pooled and integrated. Given that these communications are about innovative work, and therefore cannot be formalized and routinized into standardized forms, they must be face-to-face. This requirement reinforces the need for a collegial structure based on positive and informal interpersonal relations, so that personal communications are not excessively inhibited or distorted.

The above characteristics are specific to R-D-U work in or with an organization like the manpower system. In addition, the characteristics of innovative organizations listed in Section IV of this report also apply to an organization whose mission is that of innovating. In Section IV, 33 out of a total of 42 innovativeness "markers" were listed; the remaining 9 were described as referring to aspects which cannot be changed in the manpower system because of such limitations as merit system practices, organizational complexity, and the constraints of the federal-state relationship. However, if an R-D-U organization were to exist outside of the formal manpower system framework, and therefore not subject to those limitations, then it should also have the remaining 9 characteristics:

1. The leadership are professionally trained, and active in professional societies and organizations as members of committees, elected officers, and authors of professional articles and papers presented at conventions.

2. Many staff members are active members of professional associations or societies, serve on committees, and attend meetings both locally and beyond the local chapters.

3. Organizational leaders are ambitious and striving for higher status than they have achieved so far.

4. Each supervisor supervises relatively few people, with whom he or she works as a consultant rather than as a giver of orders.

5. There are relatively few written rules and standardized procedures, and those which exist can be changed without consulting higher authority.

				LODI
ADOPTION			GLT	
DIFFUSION		SIM/IM		
MEDIA/METHODS	RM/RP			
RETRIEVAL				

6. The staff is diverse, representing many different occupational specialties or professions.

7. The organization has a large number of different tasks and work units.

8. The organization sometimes has slack resources (i.e., staff time, money, space not in full time use) etc.

9. The organization experiences crises from time to time which endanger its existence.

These characteristics are not essential for R-D-U work, in the sense that some kinds of R-D-U may be accomplished through other kinds of organization structures and processes. However, it is probably also true that a different kind of structure would result in a rather different kind of R-D-U process and effect than those described in this report.

				LODI
ADOPTION			GLT	
DIFFUSION		SIM/IM		
MEDIA/METHODS	RM/RP			
RETRIEVAL				

VI. A SUMMARY OF OPERATING PRINCIPLES IN SOCIAL SCIENCE KNOWLEDGE RETRIEVAL, DIFFUSION, AND UTILIZATION

There are several main themes which run through the foregoing account of what has been learned in MSS' work in developing and implementing a model for putting social science knowledge to use in the manpower system:

1. In a field in which there is often too ready adoption of faddish technologies and methods based on little more than the current fashion in the business and academic communities, MSS develops its contents and processes out of extensive reviews of research. In a field in which the typical process is for a new methodology or technique to be invented first and then justified by appeal to existing research which supports it, MSS works in the reverse direction: the methodology or technique is the outgrowth of the existing research.

2. The forms and processes used by MSS for communicating knowledge are also based on research in the diffusion and utilization of innovations, and in organizational structure as it affects adoption of innovations.

3. Applications of knowledge are made directly and concretely to manpower agency work, rather than generalized to all fields of practice and agency types.

4. Knowledge is put in the form of actions which implement the knowledge, rather than left at the cognitive or intellectual level, and the communication process is not completed until the receiver practices and uses the knowledge. Such use is built into the communication process through practice exercises and task assignments.

5. Knowledge-bearing products are composed of mass media components (i.e., print, films, tapes), so as to achieve freedom from reliance on expensive on-site and face-to-face communication from experts.

6. Latitude is provided the user to adapt the knowledge to local situations, thus also preserving the autonomy of the user. Tightly programmed lock-step methods are avoided.

				LODI
ADOPTION			GLT	
DIFFUSION		SIM/IM		
MEDIA/METHODS	RM/RP			
RETRIEVAL				

7. Throughout each step in the process, line workers as potential users are involved as testers, critics, sources of information and judgement, and planners. They also serve as links to gatekeepers higher in the hierarchy.

8. Informal and personal contacts are used as steps toward entry into the formal and official communication and diffusion system.

9. An inter-disciplinary collegial-professional type of organizational structure, with a flattened hierarchy, problem-solving and policy-making by consensus, and other characteristics associated with innovativeness, is required for institutionalizing the R-D-U model described above.

10. Innovation sponsors have no authority over the potential users, but are dependent on them for their success, while also maintaining dependence on academic research institutions.